Development Services Department
Environmental Coordinator
450 110th Avenue NE
Bellevue, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPOSAL NAME:	NE 24th St at 172nd Ave NE Slope Stabilization
LOCATION:	16910 NE 24th Street
FILE NUMBERS:	20-111002-LO
PROPONENT:	City of Bellevue Transportation Department, Contact Jun Suk An

DESCRIPTION OF PROPOSAL: Construct a soldier pile wall to stabilize the existing slope on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE. The project includes disturbance and impacts within a potential type-F stream buffer and steep slope critical area.

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision.

DATE ISSUED: December 3, 2020

APPEAL DATE: December 17, 2020
A written appeal must be filed in the City Clerk's Office by 5 p.m. on the date noted above.

This DNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Issued By: *Heidi Bedwell, Planning Manager* **for** **Date:** December 3, 2020
Elizabeth Stead, Environmental Coordinator
Development Services Department

City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	NE 24th St at 172nd Ave NE Slope Stabilization
Proposal Address:	16910 NE 24th Street
Proposal Description:	Critical Areas Land Use Permit to construct a soldier pile wall to stabilize the existing slope on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE. The project includes disturbance and impacts within a potential type-F stream buffer and steep slope critical area.
File Number:	20-111002-LO
Applicant:	City of Bellevue Transportation Department
Decisions Included:	Critical Areas Land Use Permit (Process II. LUC 20.30P)
Planner:	Drew Folsom, Land Use Planner
State Environmental Policy Act Threshold Determination:	**Determination of Non-Significance** *Heidi Bedwell, Planning Manager* Elizabeth Stead, Environmental Coordinator Development Services Department
Director's Decision:	**Approval with Conditions** Michael A. Brennan, Director Development Services Department By: *Heidi Bedwell, Planning Manager* Elizabeth Stead, Land Use Director

Application Date:	July 1, 2020
Notice of Application Publication Date:	August 27, 2020
Decision Publication Date:	December 3, 2020
Project/SEPA Appeal Deadline:	December 17, 2020

For information on how to appeal a proposal, visit Development Services Center at City

Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

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Attachments

1. Environmental Checklist
2. Critical Areas Report and Mitigation Plan
3. Geotechnical Report - In File

I. Proposal Description

The applicant requests a Critical Areas Land Use Permit approval to construct a soldier pile wall and associated slope stabilization measures in a steep slope critical area, 50-foot top-of-slope buffer, 75-foot top of slope setback, and 100-foot type-F stream (Idylwood Creek) buffer.

The project will construct a soldier pile wall to stabilize the existing slope on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE. The wall will be constructed within the City of Bellevue right-of-way. However, mitigation planting work and pipe outfall stabilization work will be done on City of Bellevue Parks property (Ardmore Park). In addition to the installation of the soldier pile wall, the eroded slope toe will be repaired, and a stormwater outfall constructed to prevent future erosion. Failure to repair the eroded slope toe and control the stormwater flows from the existing culvert could result in additional erosion that could undermine the proposed soldier pile wall. Repair of the toe of the slope will require benching of the eroded area, reestablishing the stormwater outfall pipe, construction of an energy dissipating outfall structure, and backfilling of the eroded area with compacted aggregate.

The project proposes 4,455 square feet of permanent impacts in the combined stream buffer and steep slope critical areas. Permanent impacts are associated with the installation of a solider pile wall and slope stabilization. The physical wall structure and backfill will become part of the built road surface and be overlaid with a sidewalk and associated infrastructure. Additionally, a 4-foot strip to the north of the wall will be overlaid with quarry spalls. These impacts occur in a location generally vegetated with a mix of Himalayan blackberry and native trees. A total of 11 trees of Douglas fir, big-leaf maple, and English Holly species will be removed as a result of the project. An additional six trees will be monitored during and after construction and will remain if feasible or will be converted to habitat snags. All downed trees will remain on site. Approximately 5,890 square feet of temporary impacts in the combined stream buffer and steep slope critical areas are anticipated.

The project proposes 10,590 square feet of stream buffer and steep slope critical area enhancement as compensation for 10,345 square feet of temporary and permanent impacts. The mitigation includes the removal of invasive species and the planting of 65 native trees, and additional native shrubs and groundcover.

The proposed activity is an allowed use in a critical area however stabilization measures require approval of a Critical Areas Land Use Permit per LUC 20.25H.055. See figure 1 and 2 below for existing conditions and proposed stabilization and mitigation planting.

Figure 1 Existing Conditions

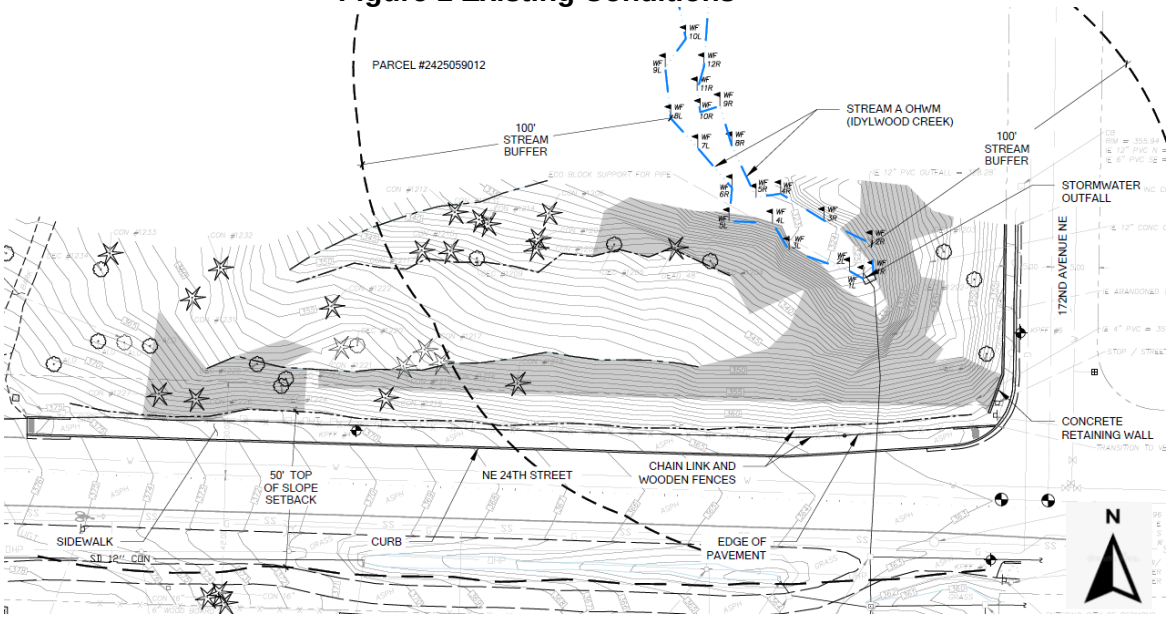
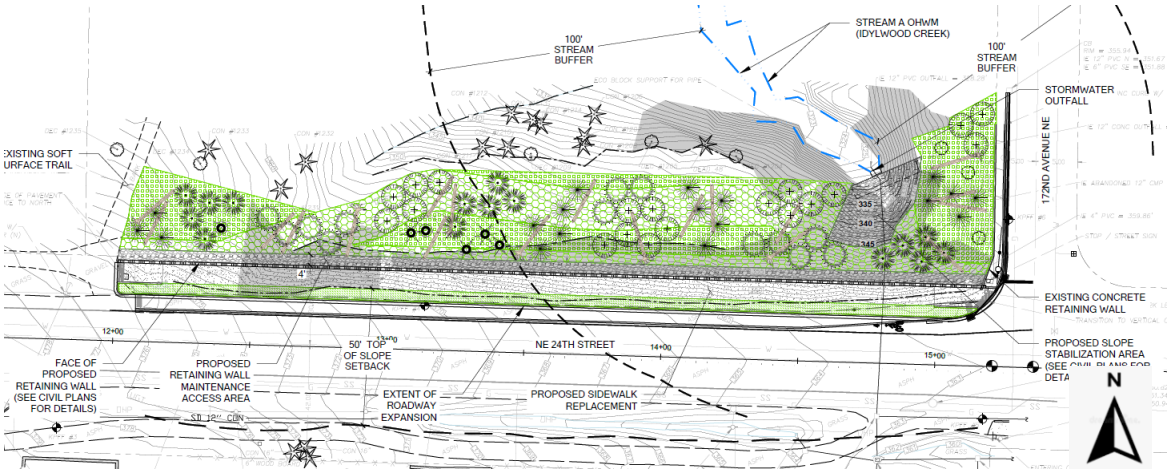


Figure 2 Proposed Stabilization and Mitigation Planting



II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The project site is located in the right of way of NE 24th Street between 171st Ave NE and 172nd Ave NE and at 16910 NE 24th Street within the City of Bellevue Ardmore Park. This parcel is approximately 9.93 acres in size. The parcel is currently forested open space with recreational trails. A potential type-F stream,

Idylwood Creek, and several steep slopes are present on the site. The proposal includes permanent modification due to stabilization measures of steep slopes and stream buffer predominately within the dedicated right of way of NE 24th Street. See figure 3 below for Aerial photo of project site.

Figure 2 Aerial Photo

B. Zoning

The project takes place within the City of Bellevue NE 24th Street public right of way and Ardmore Park which are located in the R-5 single-family zoning district.· The properties to the east of the park, across 172nd Avenue NE are in the City of Redmond. Properties to the west and south are in the City of Bellevue and developed with single family residences. North of the NE 24th Street public right of way are private tracts and single-family residences. The properties adjacent to Ardmore Park and in the immediate vicinity of the project site are zoned R-5.

The property is within the Critical Areas Overlay District and is regulated by the standards and regulations of the LUC 20.25H due to the presence of a steep slope critical area and a potential type F-stream.

C. Land Use Context

The NE 24th Street right of way has a Comprehensive Plan Land Use Designation of SF-H (Single Family High Density) and Ardmore Park has a Comprehensive Plan Land Use Designation of P/SF-H (Park/Single Family High Density). Improvement and stabilization of public right of way is consistent with this land

use.

D. Critical Areas Functions and Values

i. Streams and Riparian Areas

Most of the elements necessary for a healthy aquatic environment rely on processes sustained by dynamic interaction between the stream and the adjacent riparian area (Naiman et al., 1992). Riparian vegetation in floodplains and along stream banks provides a buffer to help mitigate the impacts of urbanization (Finkenbine et al., 2000 in Bolton and Shellberg, 2001). Riparian areas support healthy stream conditions.

Riparian vegetation, particularly forested riparian areas, affect water temperature by providing shade to reduce solar exposure and regulate high ambient air temperatures, slowing or preventing increases in water temperature (Brazier and Brown, 1973; Corbett and Lynch, 1985).

Upland and wetland riparian areas retain sediments, nutrients, pesticides, pathogens, and other pollutants that may be present in runoff, protecting water quality in streams (Ecology, 2001; City of Portland 2001). The roots of riparian plants also hold soil and prevent erosion and sedimentation that may affect spawning success or other behaviors, such as feeding.

Both upland and wetland riparian areas reduce the effects of flood flows. Riparian areas and wetlands reduce and desynchronize peak crests and flow rates of floods (Novitzki, 1979; Verry and Boelter, 1979 in Mitsch and Gosselink, 1993). Upland and wetland areas can infiltrate floodflows, which in turn, are released to the stream as baseflow

Stream riparian areas, or buffers, can be a significant factor in determining the quality of wildlife habitat. For example, buffers comprised of native vegetation with multi- canopy structure, snags, and down logs provide habitat for the greatest range of wildlife species (McMillan, 2000). Vegetated riparian areas also provide a source of large woody debris that helps create and maintain diverse in-stream habitat, as well as create woody debris jams that store sediments and moderate flood velocities.

Sparsely vegetated or vegetated buffers with non-native species may not perform the needed functions of stream buffers. In cases where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be restored or revegetated (May 2003). Until the newly planted buffer is established the near term goals for buffer functions

may not be attained.

Riparian areas often have shallow groundwater tables, as well as areas where groundwater and surface waters interact. Groundwater flows out of riparian wetlands, seeps, and springs to support stream baseflows. Surface water that flows in to riparian areas during floods or as direct precipitation infiltrates into groundwater in riparian areas and is stored for later discharge to the stream (Ecology, 2001; City of Portland, 2001).

ii. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided.

Steep slopes may serve several other functions and possess other values for the City and its residents. Some of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provide a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a "green" backdrop for urbanized areas enhancing property values and buffering urban development.

iii. Habitat Associated with Species of Local Important LUC 20.25H.150.A

Urbanization, the increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (McKinney 2002, Blair 2004, Marzluff 2005, Munns 2006), is a major cause of native species local extinctions (Czech et al 2000), and is likely to become the primary cause of extinctions in the coming century (Marzluff et al 2001a). Cities are typically located along rivers, on coastlines, or near large bodies of water. The associated floodplains and riparian systems make up a relatively small percentage of land cover in the western United States, yet they provide habitat for rich wildlife communities (Knopf et al. 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development (Blair 1999, Marzluff 2005). Protected wild areas alone cannot be depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes

(genetic drift, inbreeding, colonization) can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain biodiversity over a range of geographic scales (Shaughnessy and O'Neil 2001). As well, typological approaches to taxonomy or the use of indicators present the risk that evolutionary potential will be lost when depending on reserves for preservation (Rojas 2007). Urban habitat is a vital link in the process of wildlife conservation in the U.S.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The project takes place predominately within City of Bellevue public right of way which is not subject to zoning district dimensional requirements. The activity within Ardmore Park is limited to temporary disturbance and placement of quarry spalls to improve stabilization. The project complies with the land use dimensional requirements as applicable. All Land Use Code requirements will be confirmed during review of required construction permits.

B. Critical Areas Requirements LUC 20.25H:

A. Critical Areas Requirements LUC 20.25H

1) **Consistency with Land Use Code Critical Areas Performance Standards of LUC 20.25H.055.C.3.m.**
The following performance standards, when applicable, shall be incorporated in the design of development on sites with steep slope geologic hazard critical areas, buffers, or structure setbacks. The incorporation of performance standards is required to be documented prior to building permit or clearing and grading permit approval to install the proposed stabilization measures.

a. <u>When Allowed.</u> New or enlarged stabilization measures shall be allowed only to protect existing primary structures and infrastructure, or in connection with uses and development allowed pursuant to subsection B of this section. Stabilization measures shall be allowed only where avoidance measures are not technically feasible.

Finding: The proposed stabilization measure is necessary to protect existing right of way infrastructure, an allowed use within critical areas and buffers. As discussed in the Geotechnical Report prepared by HWA Geoscience Inc., dated June 30, 2020: "The roadway embankment is in an unstable condition, as indicated by the surficial evidence of movement, inclinometer data, and subsurface conditions". As part of the analysis, the report states: "We recommend that the slope be stabilized by the construction of a soldier pile and lagging wall and restoration of the toe of the slope, that has been eroded by past culvert failures." Avoidance is not possible due to the proximity to the existing roadway and walkway.

b. <u>Type of Stabilization Measure Used.</u> Where a stabilization measure is allowed, soft stabilization measures shall be used, unless the applicant demonstrates that soft stabilization measures are not technically feasible. An applicant asserting that soft stabilization measures are not technically feasible

shall provide the information relating to each of the factors set forth in this section for a determination of technical feasibility by the Director. Only after a determination that soft stabilization measures are not technically feasible shall hard stabilization measures be permitted. The determination of whether a technique or stabilization measure is "technically feasible" shall be made by the Director as part of the decision on the underlying permit after consideration of a report prepared by a qualified professional addressing the following factors:

(1) Site conditions, including topography and the location of the primary structure in relation to the critical area;

(2) The location of existing infrastructure necessary to support the proposed measure or technique;

(3) The level of risk to the primary structure or infrastructure presented by erosion or slope failure and ability of the proposed measure to mitigate that risk;

(4) Whether the cost of avoiding disturbance of the critical area or critical area buffer is substantially disproportionate as compared to the environmental impact of proposed disturbance, including any continued impacts on functions and values over time; and

(5) The ability of both permanent and temporary disturbance to be mitigated.

Finding: A Geotechnical Report prepared by HWA Geoscience Inc., dated June 30, 2020, was submitted as part of the permit. The report evaluated stabilization measures and feasibility of avoidance. Generally, due to the slope's proximity to existing right of way infrastructure; and the underlying soils and stability issues associated with the slope, avoidance was ruled out.

The analysis considered:

1. Excavate the fill soils and replace with properly compacted structural fill at a slope no steeper than 2H:1V. This could include a retaining wall, if desired, to limit the footprint of the fill;
2. Buttress the existing fill with a blanket of quarry spalls at a lower angle (no steeper than 3H:1V) and construct a quarry spall key at the toe of the slope to reduce the potential for future sliding;
3. Construct a secant pile wall at the top of the slope to prevent

future downward slope creep.

4. Construct a soldier pile and lagging wall at the top of the slope to prevent future downward slope creep.

Alternative 4 was selected as it will minimize the disturbance compared to options 1, and 2, and provide the most protection for the critical infrastructure compared to option 3. As stated in the geotechnical report: "It is HWA's recommendation that the unstable slope be stabilized with a soldier pile and lagging wall. As the proposed wall will need to restrain a slide mass that extends as much as 16 feet below grade." The design and location are necessary to preserve the existing infrastructure. The location is offset from the travel lanes associated with the roadway to provide stability and account for traffic surcharge.

The stabilization measures are consistent with the Land Use Code requirements to stabilize the slope using hardened stabilization (LUC 20.25H.055). All evaluations and recommendations submitted as part of the permit package and used in the city's evaluation of the proposal were completed by licensed qualified professionals. **See Geotechnical Review related Conditions of Approval in Section IX of this report.**

2) **Consistency with Land Use Code Critical Areas Performance Standards LUC 20.25H.080.** Development on sites with a type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable.

a) Lights shall be directed away from the streams.

Finding: Lighting is not part of the proposed project.

b) Activity that generates noise such as parking lots, generators, and residential uses, shall be located away from the stream, or any noise shall be minimized through use of design and insulation techniques.

Finding: The project provides slope stability to protect existing infrastructure and will not result in the generation of additional noise, outside of temporary construction impacts. A slight modification in road noise may be realized, although this is not a design criteria for the project and will be mitigated by the planting of dense native vegetation.

c) Toxic runoff from new impervious area shall be routed away from the stream.

Finding: Approximately 1,543 square feet of new pollution generating impervious surface is proposed but will be routed away from the stream. Existing vegetation, as well as the addition of dense native plantings in the steep slope and stream buffer, will improve water quality buffer functions.

d) Treated water may be allowed to enter the stream.

Finding: No additional treatment of water is proposed. During construction, erosion control BMPs required by the City of Bellevue Stormwater Manual and Ecology's Stormwater Management Manual for Western Washington will be employed.

e) The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use.

Finding: The entire stream buffer will be planted with dense vegetation within the project area.

f) Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

Finding: Any applications will be conducted in accordance with the City of Bellevue's "Environmental Best Management Practices."

g) All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met.

Finding: All standards associated with Chapter 24.06 will be met.

3) **Consistency with Land Use Code Critical Areas Performance Standards LUC 20.25H.125.**

Development within a landslide hazard or steep slope critical area or the critical area buffers of such hazards shall incorporate the following additional performance standards in design of the development, as applicable. The requirement for long-term slope stability shall exclude designs that require regular and periodic maintenance to maintain their level of function.

a. Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;

Finding: The proposal is the minimum necessary to provide the necessary stabilization near right of way infrastructure. The finished grade will be similar to the existing conditions.

b. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

Finding: Slope stabilization and restoration has been designed to minimize disturbance of the slope and its natural landforms. As

discussed, the geotechnical report, stabilization is necessary and a soldier pile wall is recommended. The proposal is designed to be the minimum necessary to protect infrastructure. The slope below the wall will be restored and will be significantly enhanced with native planting and removal of invasive species. **See Mitigation and Restoration Related Conditions of Approval in Section IX of this report.**

c. The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;

Finding: As part of the geotechnical report prepared by HWA Geoscience Inc., dated June 30, 2020, demonstrating that the project meets safety requirements. Based on the Geotechnical evaluations, and the Critical Areas analysis prepared by The Watershed Company, the project will not result in a greater risk or a need for increased buffers on adjacent properties.

d. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;

Finding: This proposal includes the use of retaining walls and vegetation restoration to improve stability and reduce the potential for future slope failure. The construction of retaining walls is not expected to cause increased disturbance as compared to the artificial grading of the slope.

e. Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;

Finding: The proposal will add approximately 1,543 square feet of new impervious surface between the soldier pile wall and the existing roadway. The impervious surface will be associated with a new sidewalk, an allowed use in critical areas and buffers per LUC 20.25H.055. All new impervious surface will be within existing City of Bellevue right of way in an area which would provide minimal environmental functions and values after the construction of the soldier pile wall.

f. Where change in grade outside the building footprint is necessary, the site retention system should be stepped, and re-grading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;

Finding: No topographic modification is expected outside of what is necessary through the stabilization associated with the soldier pile wall, and mitigation planting.

g. Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;

Finding: This proposal does not include the modification of a building footprint. Freestanding retaining walls to provide slope stabilization.

h. On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification;

Finding: This proposal does not include a request to construct or expand a residence or other structure.

i. On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types; and

Finding: This proposal does not include a request to construct or expand a residence or other structure.

j. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.

Finding: The proposed project will avoid or minimize impacts to steep slopes, streams, and buffers wherever feasible. However, total avoidance will not be possible due to the location of the project. All unavoidable impacts to critical areas will be mitigated as required by City requirements (LUC 20.25H). The applicant has provided a plan for site mitigation and restoration that is required as a condition of approval of this permit. The mitigation plan mitigation will include 10,590 square feet of enhancement in the steep slope critical area and stream buffer. **See Federal and State Permits; and Mitigation related Conditions of Approval in Section IX of this report.**

4) **Habitat Modification - Consistency With Performance Standards - LUC 20.25H.160**

Finding: The applicant has obtained the services of a qualified habitat biologist and has provided an acceptable habitat management plan that preserves existing habitat features. The proposed alignment does not occur in any habitat used by salmonid species. Potential habitat for several species of local importance is present within the area. The

application includes a mitigation plan that includes replacement trees to restore areas disturbed by construction of the facility. Downed trees will remain on site to improve habitat functions. The project habitat management plan is described in Table 2 of the Critical Areas Report and Mitigation Plan prepared by The Watershed Company, dated June 24, 2020. **See Mitigation related Conditions of Approval in Section IX of this report**.

IV. Public Notice and Comment

Application Date:	July 1, 2020
Public Notice (500 feet):	August 27, 2020
Minimum Comment Period:	September 10, 2020

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on August 27, 2020. It was mailed to property owners within 500 feet of the project site. The City received one public comment related to the proposal from King County Metro Services requesting notification if any bus stop is temporarily impacted.

City Response: This comment was forwarded to the applicant who responded they will notify and coordinate with King County if any bus stop temporary relocation is necessary.

V. Summary of Technical Reviews

Clearing and Grading

The Clearing and Grading Division of the Development Services Department has reviewed the proposed site development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

VI. State Environmental Policy Act (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

A. Earth and Water

The site contains steep slope geological hazards and a potential type-F stream (Idylwood Creek). As a result of the proposed project, there will be unavoidable permanent and temporary impacts to the steep slope and stream buffer. Permanent impacts will occur where the soldier pile is constructed and improvements to storm drainage outfall occurs. Disturbance of existing vegetation will be minimized during construction and the remaining protected slope area will be restored once construction is complete. Best Management Practices "BMPs" and erosion controls measures will be implemented to minimize sediment input during construction. On-site mitigation for temporary and permanent impacts will include planting native trees, shrubs, and groundcover. Downed trees will remain within the stream buffer.

B. Animals

The project area includes publicly owned natural area open space and trails that contain quality habitat for birds and mammals. Although no species were observed on the site, there is potential habitat for several species of local importance, particularly Pileated woodpecker. The proposed activities are designed to be minimally disruptive to wildlife habitat. The mitigation plan required by the proposal includes the planting of native vegetation and retention of snags and downed logs resulting in an overall improvement for habitat functions and values. **See Mitigation related Conditions of Approval in Section IX of this report.**

C. Plants

The project involves the removal of vegetation including 10 significant trees to construct the necessary improvements. Additionally, 6 trees will be monitored during construction and if retention is not feasible they will become habitat snags. To enhance the area's plant communities and potential to provide habitat, the applicant is required to replant the areas of temporary disturbance with native plants per the site Mitigation Plan prepared by The Watershed Company, dated June 24, 2020. The restoration includes approximately 10,500 square feet of native planting within the steep slope and stream buffer. The mitigation plan proposes native ground cover, shrubs, and 65 trees. Proposed tree species will consist of big leaf maple, Douglas fir, western red cedar, and western hemlock **See Temporary Disturbance and Mitigation related Conditions of Approval in Section IX of this report.**

VII. Decision Criteria

A. Critical Areas Land Use Permit Decision Criteria 20.30P

The proposal, as conditioned below, meets the applicable regulations and decision criteria for a Critical Areas Land Use permit pursuant to LUC Section 20.30P.

a) The proposal obtains all other permits required by the Land Use Code; and

Finding: The applicant must obtain a clearing and grading permit for the project. The clearing and grading permit must reference this approval. **See permit related Conditions of Approval in Section IX of this report.**

b) The proposal utilizes to the maximum extent possible, the best available construction and design & development techniques which result in the least impact on the critical area and critical area buffer; and

Finding: As discussed in Section III of this report, the proposed soldier pile wall will result in the least impact on the critical area and critical area buffer.

c) The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and;

Finding: As discussed in Section III of this report, the proposal meets the performance standards of LUC Section 20.25H.055.C.3.m for stabilization measures on geological hazard areas, LUC 20.25H.080 for work within stream buffers, and LUC Section 20.25H.125 for areas of geological hazards.

d) The proposal will be served by adequate public facilities including street, fire protection and utilities; and

Finding: The site is adequately served by existing public facilities.

e) The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and

Finding: The applicant will be required to implement the Mitigation Plan prepared by The Watershed Company dated June 24, 2020, as a condition of approval of this permit. The planting is proposed to be monitored per the goals and objectives found in the submitted critical area report. Monitoring is proposed for five years "to ensure successful establishment of native vegetation." Mitigation plans showing all planting and other mitigation features and plant quantity will be required to be submitted under the subsequent clearing and grading permit. **See Mitigation and Monitoring Related Conditions of Approval in Section IX of this report.**

f) The proposal complies with other applicable requirements of this code.

Finding: As conditioned and discussed in this report, the proposal complies with all applicable code requirements including, but not limited to,

performance standards for development in stream buffers, geologic hazard areas, and Critical Areas Land Use permit decision criteria**.**

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposed **NE 24th Street at 172nd Avenue NE Slope Stabilization**.

Note- Expiration of Approval: In accordance with LUC 20.30P.150, a Critical Areas Land Use permit automatically expires and is void if the applicant fails to file for a Clearing and Grading permit or other necessary development permits within one year of the effective date of the approval.

IX. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Tom McFarlane, 425-452-5207
Land Use Code- BCC 20.25H	Drew Folsom, 425-452-4441
Noise Control- BCC 9.18	Drew Folsom, 425-452-4441

The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:

1. Final Mitigation Plan: A mitigation plan showing planting areas and square footages, plant quantities, temporary irrigation, and other features is required to be submitted as part of the clearing and grading permit. The plan must reference the information in the critical areas report under this approval.

Authority: Land Use Code 20.30P.140; 20.25H.220.
Reviewer: Drew Folsom, Development Services Department

2. Rainy Season restrictions: Due to the presence of a geological hazard critical area, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work

during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

Authority: Bellevue City Code 23.76.093.A
Reviewer: Tom McFarlane, Development Services Department

3. Clearing and Grading Permit Required: An application for a clearing and grading permit or other required permits must be submitted and approved. Plans submitted as part of either permit application shall be consistent with the activity permitted under this approval.

Authority: Land Use Code 20.30P.140
Reviewer: Drew Folsom, Development Services Department

4. Obtain all Other Applicable State and/or Federal Permits: Before work can proceed, all required federal and state permits and approvals must be obtained by the applicant. A copy of any approved Hydraulic Project Approval (HPA) issued by the Washington State Department of Fish and Wildlife shall be submitted to the City of Bellevue, prior to beginning construction.

Authority: Bellevue City Code 9.18
Reviewer: Drew Folsom, Development Services Department

5. Restoration for Areas of Temporary Disturbance: In order to restore temporary disturbance within critical areas, a restoration plan shall be submitted for review and approval by the City of Bellevue prior to the issuance clearing and grading permit. The plan shall include documentation of existing site conditions, proposed restoration measures to return the site to its existing conditions per LUC 20.25H.220.H, prescribed maintenance activities to ensure plant survival, and monitoring requirements (including reporting) to document success/failure.

Authority: Land Use Code 20.25H.220.H
Reviewer: Drew Folsom, Development Services Department

6. Maintenance and Monitoring Plan: Maintenance and monitoring is required for five years after plant installation. A maintenance and monitoring plan with goals and objectives must be included with the mitigation plan and submitted under the clearing and grading permit.

Authority: Land Use Code 20.25H.220
Reviewer: Drew Folsom, Development Services Department

7. Geotechnical Review: The project geotechnical engineer must review the final plans, including the retaining wall and toe of slope repair designs. A letter from the geotechnical stating that the plans conform to the recommendations in the geotechnical report and any addendums and supplements must be submitted to the clearing and grading section prior to issuance of the construction permit.

Authority: Clearing & Grading Code 23.76.050
Reviewer: Tom McFarlane, Development Services Department, Clearing & Grading Section

DEVELOPMENT SERVICES DEPARTMENT
450 110TH AVENUE NE
BELLEVUE, WA 98009-9012

SEPA Environmental Checklist

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit the Land Use Desk in the Permit Center between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4) or call or email the Land Use Division at 425-452-4188 or landusereview@bellevuewa.gov. Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

Purpose of checklist:
The City of Bellevue uses this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:
This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies and reports. Please make complete and accurate answers to these questions to the best of your ability in order to avoid delays.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

PLEASE REMEMBER TO SIGN THE CHECKLIST. Electronic signatures are also acceptable.

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A. Background [help]

1. Name of proposed project, if applicable: [help]
   NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

2. Name of applicant: [help]
   City of Bellevue

3. Address and phone number of applicant and contact person: [help]
   450 110th Avenue NE
   Bellevue, WA 98004
   (425)452-4230
   Jun Suk An
   jan@bellevuewa.gov

4. Date checklist prepared: [help]
   June 4, 2020

5. Agency requesting checklist: [help]
   City of Bellevue Development Services Department

6. Proposed timing or schedule (including phasing, if applicable): [help]
   The project construction is anticipated to start in spring 2021.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [help]
   City of Bellevue and City of Redmond will work collaboratively to enhance the Idylwood Creek through a separate project.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]
   Ardmore Stability Pre-Design Study – Osborn Consulting, Inc.
   Stormwater Technical Memorandum – KPFF Consulting Engineers
   Critical Areas Report – The Watershed Company
   Arborist Report – The Watershed Compnay
   Geotechnical Report – HWA GeoSciences, Inc.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]
   None known.

10. List any government approvals or permits that will be needed for your proposal, if known. [help]
    Clearing and Grading Permit
    Right-of-Way Use Permit
    Utility Extensions Permit
    Critical Areas Land Use Permit
    NPDES Construction Stormwater General Permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe

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certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]

This project will construct a soldier pile wall to stabilize the existing slope in an area of about 1/3rd acre at Ardmore Park (on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE). The work to be performed under this contract includes but is not limited to, traffic control; roadway excavation; removing existing pavement, curb and gutter, fence and guardrail; constructing storm drain pipes including storm structures, cement concrete curb and gutter, sidewalk, curb ramps, asphalt pavement, traffic barrier with pedestrian railing, guardrail and soldier pile wall with tiebacks; environmentally sensitive area buffer impact mitigation planting and restoration; grind and overlay of pavement; channelization and signing; and property restoration.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]

The project is located at the southeast corner of Ardmore Park, on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE. It is situated within the southwest quarter of Section 24 of Township 25 North, Range 05 East of the Public Land Survey System.

B. Environmental Elements [help]

1. Earth [help]

a. General description of the site: [help] (select one): ☐Flat, ☒rolling, ☐hilly, ☒steep slopes, ☐mountainous, other: *NE 24th Street roadway generally slopes to the east at about 5 percent slope, with the exception of the steepest slope, described in B.1.b. below.*

b. What is the steepest slope on the site (approximate percent slope)? [help]

Steep slopes are currently retaining NE 24 Street roadway to the north. Slopes range from 30% to 50%. The project proposes to stabilize the slope by constructing a soldier pile wall.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]

Sand and silty sand beneath fill. No agricultural land of long-term commercial significance is present on the site.

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d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

According to the Geotechnical Engineering Study completed by HWA Geosciences, Inc., the existing embankment slope has undergone episodic slope movements that have resulted in damage to the roadway. These movements have been a result of past stormwater pipe failures, at the base of the embankment, and associated erosion. The observed slope movement have been shallow in nature and no signs of deep seated slope instability have been observed. The purpose of the project is to stabilize and reconstruct the embankment to prevent future slope displacements. Future slope instability is not expected upon completion of the proposed project.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

The purpose of fill is to stabilize an eroding slope and support construction of the retaining wall construction. Approximately 360 cubic yards will be excavated and approximately 600 cubic yards of fill will be placed. This work will take place across an area of approximately 18,000 square feet.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]

The project is intended to stop and limit future erosion. Therefore, no long-term erosion is anticipated as a result of the proposed project. Some minor, localized, short-term erosion during construction may occur. The incoportation of a temporary erosion sediment control (TESC) plan and best management practices (BMPs) will reduce the potential for construction-related erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

A small area of additional impervious area is proposed. It is approximately 2,540 SF of sidewalk, which is non-pollution generating. The area of project site is 52,800 SF and the site is currently covered with 7,235 SF of impervious surface (14%). After project construction, the site will be covered with 9,458 SF of impervious surface (18%).

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

The project will stabilize an overly steep slope adjacent to the existing stormwater outfall by placing quarry spall rock. The project also proposes to provide seeding and planting. Standard construction BMP's will be in use to limit the risk

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of erosion during construction of the project.

Further mitigated per BCC 9.24 "Erosion and Sedimentation Control"

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]
Temporary emissions associated with standard construction equipment are anticipated. The project will not result in additional permanent air emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]
No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]
Construction equipment will be maintained in good working order. Construction industry BMPs will be incorporated into construction plans and contractor specifications to reduce and control air emissions. These practices may include covering stockpile aggregates, sweeping or washing street surfaces, minimizing exposed areas, and using construction machinery equipped with standard mufflers.

To reduce carbon monoxide and particulate emissions from gasoline and diesel engines, construction equipment will be well maintained and equipment will be turned off when not in use.

3. Water [help]

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]
Yes, the headwaters of Idylwood Creek begin at the stormwater outfall and extend to the northwest, outside the project area. No other surface water bodies are present within the project area.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]
Yes, stormwater oufall stabilization will take place adjacent to, but not over or in, Idylwood Creek.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]

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None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]
Temporary stormwater diversion may take place during construction to facilitate the repair work. The quantity is unknown, but is anticipated to be minimal or nonexistent depending on weather at the time of construction.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]
No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]
No discharges of waste materials are anticipated.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help]
No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]
No discharges to the ground water are anticipated.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]
The project will generate any additional runoff from the new sidewalk. Two additional catch basins will be provided to capture new runoff and will connect to the existing enclosed drainage system. Stormwater will contintue to flow as it currently does via the stormwater system and outfall.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]
The project will not generate waste materials that will enter ground or surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. [help]

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No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: [help]
The project will perpetuate the same runoff conditions that presently take place by repairing, and stabilizing the existing stormwater outfall. On the roadway and sidewalk portion of the project, the runoff from the sidewalk will no longer flow to the north to the steep slope area. Instead, new sidewalk will be sloped to the south towards NE 24th Street roadway and will be captured through enclosed drainage system.

4. Plants [help]

a. Check the types of vegetation found on the site: [help]
☒deciduous tree: alder, maple, aspen, other: *alder, maple, holly, dogwood*
☒evergreen tree: fir, cedar, pine, other: *fir*
☒shrubs
☒grass
☐pasture
☐crop or grain
☐Orchards, vineyards or other permanent crops.
☐wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other: *Click here to enter text.*
☐water plants: water lily, eelgrass, milfoil, other: *Click here to enter text.*
☒other types of vegetation: *Himalayan blackberry thickets.*

b. What kind and amount of vegetation will be removed or altered? [help]
Approximatey 10,550 SF of mostly Himalayan blackberry will be removed during construction. Eight significant trees, some of which are invasive species, will be removed or snagged.

c. List threatened and endangered species known to be on or near the site. [help]
None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]
10,550 SF of native planting area will be restored on site.

e. List all noxious weeds and invasive species known to be on or near the site. [help]
Himalayan blackberry, English holly.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. [help]

Examples include:

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birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, other: *Click here to enter text.*
mammals: ☒deer, ☐bear, ☐elk, ☐beaver, other: *Click here to enter text.*
fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, other: *Click here to enter text.*

b. List any threatened and endangered species known to be on or near the site. [help]
None.

c. Is the site part of a migration route? If so, explain. [help]
No.

d. Proposed measures to preserve or enhance wildlife, if any: [help]
Wildlife will be preserved and enhanced by removing dense and widespread invasive weeds and restoring a native plant assemblage, including trees and shrubs that provide roosting, nesting and foraging functions.

e. List any invasive animal species known to be on or near the site. [help]
None.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]
The completed project will not use energy.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]
No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]
Since the project will not use energy, no conservation features are proposed.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help]
Other than the potential for construction equipment fluids or fuel spills, no health hazards or toxic chemicals will be present during construction and none will be present after completion of the project.

1) Describe any known or possible contamination at the site from present or past uses. [help]
None known.

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2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. [help]
None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project. [help]
Fluid and fuels for standard construction equipment may be used and stored during construction.

4) Describe special emergency services that might be required. [help]
None.

5) Proposed measures to reduce or control environmental health hazards, if any: [help]
All construction equipment will be maintained in good working order. All fueling and equipment maintenance will be carried out following BMP's to control the release of such materials.

b. Noise [help]

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]
Vehicle traffic is present on adjacent roadways.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indi-cate what hours noise would come from the site. [help]
Short term noise associated with standard construction equipment is anticipated during normal construction working hours (typically Monday – Saturday from 7am to 5pm).

3) Proposed measures to reduce or control noise impacts, if any: [help]
All equipment will be equipped with standard noise reducing mufflers as furnished by the manufacturer. Equipment will be kept in good working order. Equipment will not be run during evening hours or on Sundays.

Noise further mitigated per BCC 9.18 "Noise Control"

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]
The project site consists of roadways and associated righ-of-ways. Adjacnet property to the north is Ardmore Park. The proposal will not affect the current land uses on nearby or adjacent properties. The site of concern is within a passive-use area of Ardmore Park and adjacent to a public road/sidewalk.

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b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]
No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: [help]
No.

c. Describe any structures on the site. [help]
No structures are present. The project will construct a soldier pile wall.

d. Will any structures be demolished? If so, what? [help]
No structures will be demolished.

e. What is the current zoning classification of the site? [help]
Residential (R-5)

f. What is the current comprehensive plan designation of the site? [help]
The current comprehensive plan designation is single-family high-density (P/SF-H).

g. If applicable, what is the current shoreline master program designation of the site? [help]
N/A, Idlywood Creek is not a shoreline of the state.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]
Yes, Idlywood Creek is a stream critical area.

i. Approximately how many people would reside or work in the completed project? [help]
None.

j. Approximately how many people would the completed project displace? [help]
None.

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]
N/A

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]
The proposal will perpetuate the current passive park use. The project will stabilize the slope for public safety.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any: [help]
N/A

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9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]
None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]
None.

c. Proposed measures to reduce or control housing impacts, if any: [help]
N/A

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]
The height of the proposed wall is approximately 14-feet tall.

b. What views in the immediate vicinity would be altered or obstructed? [help]
None.

c. Proposed measures to reduce or control aesthetic impacts, if any: [help]
Native vegetation will replace invasive weeds, leading to a more aesthetic plant assemblage. A concrete facia will be provided on the proposed retaining wall which will face the Ardmore Park side. Proposed retaining wall will include traffic barrier with safety railing which will be visible on the traffic side on NE 24th Street.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]
None.

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]
No.

c. What existing off-site sources of light or glare may affect your proposal? [help]
None.

d. Proposed measures to reduce or control light and glare impacts, if any: [help]
N/A

12. Recreation [help]

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a. What designated and informal recreational opportunities are in the immediate vicinity? [help]
Armore Park, a passive recreation area.

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]
No. The 4-foot wide wall maintenance bench will encroach to park's property.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]
The 4-foot wide wall maintenance bench is currently not a walkable area (steep slope). Environmentally sensitive area impacts (stream buffer and steep slope) will be mitigated with appropriate plants and vegetations.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]
No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]
None are known at this location.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]
Potential impacts to cultural resources and historic resources were assessed by consulting the Washington Information System for Architectural and Archaeological Records Data (WISAARD), a database maintained by the Washington State Department of Archaeology and Historic Preservation (DAHP).

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. [help]
As required in the Bellevue Land Use Code (LUC 20.25E.060.F.2.a), if archaeological resources are uncovered during excavation, all work will immediately cease and the City, the Washington State Department of Archaeology and Historic Preservation, and affected Native American tribes shall immediately be notified.

14. Transportation [help]

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a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]
The site is served by and directly adjacent to 172nd Avenue NE and NE 24th Street.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]
The site is served by King County Metro bus routes 888 and 895.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]
No parking spaces would be created or eliminated.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]
The sidewalk along NE 24th Street will be slightly expanded. A bicycle lane will be provided. The project will provide a fall protection for the pedestrians and errant vehicle by providing a traffic barrier and pedestrian railing.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]
No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]
None.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. [help]
No.

h. Proposed measures to reduce or control transportation impacts, if any: [help]
N/A

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]
No.

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]
N/A

16. Utilities [help]

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a. Circle utilities currently available at the site: [help]
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other
All listed utilities are nearby.

c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]
The project requires CenturyLink's communication line and pole to be relocated.

C. Signature [help]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Hugh Mortensen

Name of signee: *Hugh Mortensen*
Position and Agency/Organization: *The Watershed Company*
Date Submitted: *June 16, 2020*

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Critical Areas Report

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

CITY OF BELLEVUE

June 24, 2020

Prepared for:

Bruce Erickson
KPFF
1601 Fifth Avenue, Suite 1600
Seattle, WA 98101

Prepared on behalf of (applicant):

Jun Suk An
Senior Project Manager
City of Bellevue
450 110th Avenue NE
Bellevue, WA 98004

THE WATERSHED COMPANY

Title-page image: Idylwood Creek (Stream A) in Ardmore Park.

THE WATERSHED COMPANY

750 Sixth Street South
Kirkland, WA 98033

p 425.822.5242
f 425.827.8136

watershedco.com

Reference Number: **180601.1**

Contact: **Hugh Mortensen, PWS**
Senior Ecologist / Principal

Sam Payne
Ecologist

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1 Introduction

1.1 Purpose and Background

This report has been prepared to document compliance of the NE 24th Street at 172nd Avenue NE Slope Stabilization project with the requirements of the City of Bellevue Land Use Code (LUC) 20.25H – Critical Areas Overlay District. The project proponent, City of Bellevue, is proposing to construct a soldier pile wall to stabilize the slope in or near a location where steep slopes critical areas and a stream have been identified. Regulations associated with steep slope critical area habitat are covered in this report; however, geotechnical findings related to slope stability and hazards are addressed separately by geotechnical engineers. Proposed project related impacts will be mitigated according to the mitigation plan (Appendix A), to ensure no net loss of critical area functions.

This report incorporates the findings of a wetland and stream assessment completed by The Watershed Company. A tree inventory and arborist report were also prepared by The Watershed Company (2020) that identifies impacted trees within the study area.

1.2 Location

The project is located on the southern boundary of Ardmore Park in Bellevue, Washington near the intersection of 172nd Avenue NE and NE 24th Street (parcel #2425059012). It is situated within the southwest quarter of Section 24 of Township 25 North, Range 05 East of the Public Land Survey System. A vicinity and project area map are depicted in Figure 1.

1.3 Methods

Field investigations for the delineation study were conducted on July 23, 2019 by The Watershed Company ecologists: Sam Payne and Grace Brennan.

The study area was evaluated for wetlands using methodology from the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010). Presence or absence of wetlands was determined on the basis of an examination of vegetation, soils and hydrology. These parameters were sampled at several locations to determine presence or absence of wetlands.

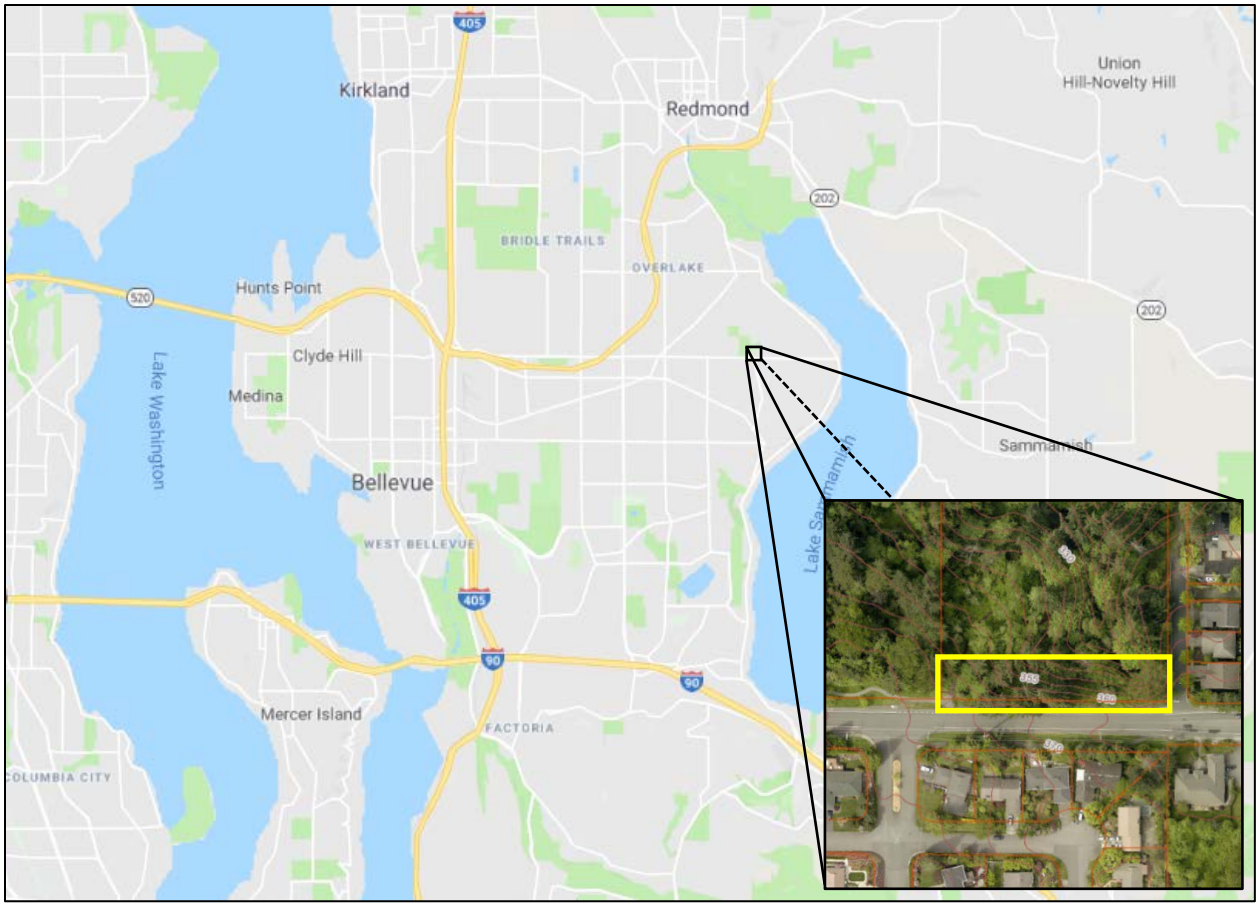


Figure 1. Vicinity and study area map. Approximate project area in yellow outline.

Characterization of climatic conditions for precipitation in the Wetland Determination Data Forms were determined using the WETS table methodology (USDA, NRCS 2015). The "Seattle Tacoma Intl AP" station from 1981-2010 was used as a source for precipitation data (http://agacis.rcc-acis.org/). The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present in the study area region.

The study area was evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington (RCW) 90.58.030 and guidance documents including *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson 2016) and *A Guide to Ordinate High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel 2016).

Public-domain information on the subject properties was reviewed for this delineation study. Resources and review findings are presented in Table 1.

2 Existing Conditions

2.1 Environmental Setting

The project is located in the City of Bellevue's Northeast Bellevue neighborhood within Ardmore Park, a forested urban park with services that include a trail network, lawns, and a playground. Surrounding land use is primarily single-family residential neighborhoods. It is geographically situated within the Puget Trough ecoregion and Western Hemlock Zone (Franklin and Dyrness 1969; Franklin 1979). The habitat type is described as Urban and Mixed Environs in a range historically classified as Westside Lowland Conifer-Hardwood Forest (Johnson and O'niel 2001). Overstory species in this zone include Douglas-fir (*Pseudotsuga menziesii*) as a dominant or codominant species with western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), western white pine (*Pinus monticola*), Pacific yew (*Taxus brevifolia*), Pacific madrone (*Arbutus* menziesii), big-leaf maple (*Acer macrophyllum*), cascara (*Frangula purshiana*), and red alder (*Alnus rubra*); that can be further subdivided into common plant associations found in the region (Chappell 2004).

The study area is within in the tributary sub-basin of Idylwood Creek, in the Cedar-Sammamish Water Resource Inventory Area (WRIA 8). Numerous streams merge in the property to form Idylwood Creek, which flows toward Lake Sammamish to the northeast. The site topography is characterized by steep ravines that contains Idylwood Creek and tributaries.

2.2 Public Information Review

Reviewed public-domain information for the site is summarized below (Table 1).

Table 1. Summary of online mapping and inventory resources.

Resource	Summary
USDA NRCS: Web Soil Survey	*Everett very gravelly sandy loam; Arents, Alderwood material (both classified as not hydric)*
USFWS: NWI Wetland Mapper	*Idylwood Creek mapped in Ardmore Park, no wetlands inventoried*
WDFW: PHS on the Web	*No priority habitats or species inventoried*
WDFW: SalmonScape	*Chinook, coho, sockeye, and steelhead modeled but not confirmed in Idylwood Creek approximately 1,300 feet north of project area.*

WA-DNR: Forest Practices Activity Mapping Tool	*Idylwood Creek in Ardmore Park Type F and transitions to Type N at southern extent*
King County iMap	*Idylwood Creek in Ardmore Park*
City of Bellevue GIS Data	*Idylwood Creek and numerous tributaries merge in Ardmore Park, steep slope critical area inventoried in project area*
WETS Climatic Condition	*Drier than normal*

2.3 Critical Areas

2.3.1 Streams

Idylwood Creek (Stream A) was delineated within the study area starting at the southern headwaters to approximately 300 feet north of the proposed project. Based on the presence of a ravine landform and other streams within similarly located features, Idylwood Creek is most likely a natural occurring water up to the point of discharge from the stormwater pipe. Above the point of discharge from the end of the stormwater pipe, there are no natural landform ravines, channels or other natural stream features present. The contributing basin has been heavily modified with residential development and city infrastructure that has altered how hydrology such as runoff and groundwater enter the system. The pipe collects stormwater gravity flow from the southern neighborhood and provides the primary source of stream hydrology.

The channel morphology is characterized by a deeply incised, wide (approximately 8-14 feet) but shallow channel. Substrate is composed of cobble and gravels with segments of clay rich substrate. Our site visit occurred during July when flows were low and filtered through cobbles and coarse gravel through numerous sections of stream that would likely inhibit fish passage. A few pools provide refugia for any fish that may be present or trapped in the stream during the dry period. Low summer flows likely limit fish migration within the study area, although the channel width and gradient suggest that fish may be able to utilize the stream during periods of greater flow. The Washington Department of Natural Resources FPARS inventory identifies a stream type transition from Type F to Type N approximately 600 feet north of the study area. This study did not include downstream investigation to confirm the presence or absence of fish passage barriers. Based on the conditions observed onsite, Idylwood Creek would meet the strict definition of a Type F water in the Washington Administrative Code (WAC) 222-16-030 and 222-16-031 based on morphologic criteria such as average width and lack of a natural downstream fish passage barrier. However, the likelihood of fish presence is low considering the low flow and physical limitations.

2.3.2 Wetlands

No wetlands are present within the study area. Idylwood Creek is deeply downcut and does not provide the morphologic conditions in which riverine wetlands develop. No locations meet the three parameters for hydrophytic vegetation, hydric soils, and wetland hydrology.

2.3.3 Geologic Hazard Areas

The project area is located along a ravine where steep slope critical areas have been identified. Steep slope critical areas were identified and depicted by KPFF using the topographic survey and then incorporated into our reporting and mitigation plans (Appendix A).

2.3.4 Habitat Associated with Species of Local Importance

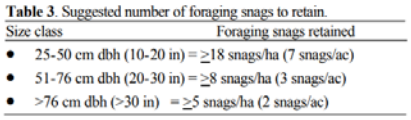
The project area is in Ardmore Park, an approximately 30-acre second-growth forest within a residential neighborhood. It is geographically fragmented and isolated, lacking corridors and connections to other natural areas. Habitat provided by the park is valuable to urban-adapted wildlife and synanthropes, particularly to forest and riparian associated species. Urban forests also provide important refuge for migratory birds and act as steppingstones for dispersal and migration.

A native Douglas-fir (*Pseudotsuga menziesii*) dominant overstory covers much of the study area with minor components of western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), Pacific dogwood (*Cornus nuttallii*), Scouler's willow (*Salix scouleriana*), Pacific crabapple (*Malus fusca*), and English holly (*Ilex aquifolium*). Beneath the canopy is an understory of native and invasive plants such as Himalayan blackberry (*Rubus armeniacus*) that is dominant throughout much of the study area. Native vegetation includes osoberry (*Oemleria cerasiformis*), sword fern (*Polystichum munitum*), and other various shrubs and forbs that are interspersed in the understory. A forest clearing is present south of Idylwood Creek that is overgrown with a monoculture of Himalayan blackberry. A discussion of Species of Local Importance which utilizes this habitat is provided in Table 2.

2.3.5 Frequently Flooded Area

Project not within mapped FEMA 100-year floodplain.

Table 2. Species of Local Importance summary table. Presence of suitable habitat does not confirm species presence. Management recommendations provided by Rodrick and Milner (1991), Larson (1997), Larson et al. (2004), USFWS (2007), Azerrad (2012), and Hayes and Wiles (2013).

Species or Habitat	Protected Status	Habitat Present	Management Recommendation
Bald eagle (*Haliaeetus leucocephalus*)	Species of Local Importance, Bald and Golden Eagle Protection Act	Potential roosting or nesting habitat; nests in mature trees, presence not verified	Protect nests from disturbance and maintain a 660-foot construction buffer from nests
Peregrine falcon (*Falco peregrinus*)	Species of Local Importance	Habitat not present; nests in cliffs, ledges, and skyscrapers and forages in open habitat	Human activity should be restricted from cliffs with nesting sites within 0.5 miles from March through June; limitations to forest practices and development near eyries
Common loon (*Gavia immer*)	Species of Local Importance	Habitat not present; nests in lakes and shorelines	Protection of loons and their habitat during pair-bonding, egg laying, and initial brood rearing (1 April through 15 July)
Pileated woodpecker (*Dryocopus pileatus*)	Species of Local Importance	Potential habitat in forest; develops breeding cavities and forages in snags and dead wood	Maintain >70% canopy closure and appropriate snag densities, table provided by Larson et al. (2004)  **Table 3**. Suggested number of foraging snags to retain. Size class — Foraging snags retained • 25-50 cm dbh (10-20 in) = ≥18 snags/ha (7 snags/ac) • 51-76 cm dbh (20-30 in) = ≥8 snags/ha (3 snags/ac) • >76 cm dbh (>30 in) = ≥5 snags/ha (2 snags/ac)
Vaux's swift (*Chaetura vauxi*)	Species of Local Importance	Habitat not present; resides primarily in old growth conifer forest and require large trees or snags with hollow tops and chambers for nesting and roosting	Retain existing old growth and existing large trees and snags, particularly those with the habitat components that the species requires
Merlin (*Falco columbarius*)	Species of Local Importance	Potential forest habitat; breeds in forest clearings, edges, and rivers	None specified
Purple martin (*Progne subis*)	Species of Local Importance	Possible association, cavity nesting in dead wood	Retain snags and potential suitable habitat, create nest boxes
Western grebe (*Aechmophorus occidentalis*)	Species of Local Importance	Habitat not present; breed in freshwater lakes and mashes and migrate to saltwater	None specified
Great blue heron (*Ardea herodias*)	Species of Local Importance	Habitat not present; breeds in trees near foraging habitat and forages in shorelines of fresh and salt waterbodies	Maintain protection in heron management area according to WDFW specifications to limit disturbance
Osprey (*Pandion haliaetus*)	Species of Local Importance	Potential forest habitat; forage in both freshwater and saltwater bodies and nest in open nesting platforms such as large snags or trees.	Restrict activities within 660 feet of active nests from April 1st – October 1st; do not cut trees within 200 feet of a nest, or 130 feet when topography allows; retain trees beyond 200 feet for nesting and roosting; when osprey nests occur in shorelines, retain a 200-foot buffer around waterbodies; preserve broken top snags and trees suitable for nesting within 2 miles

Green heron (*Butorides striatus*)	Species of Local Importance	Habitat not present; breeds and forages and coastal and inland wetlands	None specified
Red-tailed hawk (*Buteo jamaicensis*)	Species of Local Importance	Potential nesting habitat; create nests in the crowns of tall trees, forages in open areas	None specified
Western big-eared bat (*Plecotus townsendii*)	Species of Local Importance	Potential foraging habitat; forages in many habitat types and roosts in caves, mines, hollow trees, and built structures	Limit disturbance to known or suspected roosts; retain large trees and limit insecticides
Keen's myotis (*Myotis keenii*)	Species of Local Importance	Habitat poorly suited; active in moist coastal forests typically dominated with Sitka spruce and western hemlock, hibernates in mid-elevation caves	Maintaining large trees and snags and limiting insecticides
Long-legged myotis (*Myotis volans*)	Species of Local Importance	Potential habitat; active in conifer forests and riparian habitat with preference for old growth, roosts variable and include snags and live trees with loose bark, long vertical cracks, or hollows, cracks and crevices in rocks, stream banks, and the ground, buildings, bridges, caves; and mines	Maintain large snags, limited direct disturbance to known locations
Long-eared myotis (*Myotis evotis*)	Species of Local Importance	Potential habitat; active in conifer forests and many habitat types when suitable roots are present, roosts in beneath loose bark on trees, snags, stumps, and downed logs, as well as in buildings, crevices in ground-level rocks and cliffs, tree cavities, caves, and mines	Maintain large snags, limited direct disturbance to known locations
Oregon spotted frog (*Rana pretiosa*)	Species of Local Importance	Habitat not present; associated with wetland complexes > 4 ha in size with extensive emergent marsh coverage	Protected by Endangered Species Act, Biological Evaluation required for impacts to habitat
Western toad (*Bufo boreas*)	Species of Local Importance	Potential habitat but outside modeled distribution; breeds in lakes, ponds, and streams and surrounding meadows and forests	None Specified
Western pond turtle (*Clemmys marmorata*)	Species of Local Importance	Habitat not present; found in marshes, ponds, sloughs, and small lakes from sea level to approximately 763 m	A no-disturbance buffer between 400-500 m (1,300 - 1,600 ft) should be employed around all bodies of water inhabited by western pond turtles; emergent logs or stumps should be left in the water; logs should be provided if basking sites are limited or unavailable; the construction of barriers such as bulkheads, roads, ditches, or chain link fences should be avoided within a radius of at least 400 m (1,300 ft) around bodies of water occupied by pond turtles
Chinook salmon (*Oncorhynchus tshawytscha*)	Species of Local Importance, Federally Threatened	Potential habitat but species presence unlikely; present in both marine and freshwater ecosystems including streams	Protected by Endangered Species Act, Biological Evaluation required for impacts to habitat; maintain riparian buffers and instream habitat

Bull trout (*Salvelinus confluentus*)	Species of Local Importance, Federally Threatened	Potential habitat but species presence unlikely; present in cold pristine freshwater streams and lakes	Protected by Endangered Species Act, Biological Evaluation required for impacts to habitat; maintain riparian buffers and instream habitat
Coho salmon (*Oncorhynchus kisutch*)	Species of Local Importance	Potential habitat but species presence unlikely; present in both marine and freshwater ecosystems including streams	Maintain riparian buffers and instream habitat
River lamprey (*Lampetra ayresi*)	Species of Local Importance	Potential habitat present; active in freshwater streams and waterbodies	None Specified

3 Regulations

The City of Bellevue regulates streams, steep slopes critical areas, and habitats of local importance and their associated buffers/setbacks in LUC 20.25H – Critical Areas Overlay District.

3.1 Streams

Idylwood Creek is classified as Type F due to the presumed fish use opportunity during periods of high flow and lack of a natural gradient or other fish passage barrier within the study area. Buffers for streams in Bellevue depend on the stream type and whether a site is developed or undeveloped. Undeveloped sites contain no primary structure (LUC 20.25H.075.C.1.a.i). Developed sites contain a primary structure or have a recorded NGPE or NGPA prior to August 1, 2006 (LUC 20.25H.075.C.1.a.ii). The site does not contain any primary structure and we are not aware of a NGPE or NGPA, therefore, it meets criteria for undeveloped. Type F streams in undeveloped sites require a standard buffer of 100-feet measured from the top-of-bank (LUC 20.25H.075.C.1.a.i).

3.2 Geologic Hazard Areas

Geotechnical, structural, and safety components of geologic hazard areas are assessed in a separate report by qualified engineer. Geologic hazard areas and buffers are regulated in Bellevue to provide wildlife habitat in addition to other slope stability functions. Bellevue requires a top-of-slope buffer of 50 feet and toe-of-slope setback of 75 feet (LUC 20.25H.120). Bellevue requires no net loss of ecological function within steep slope critical areas and associated buffers and setbacks.

3.3 Habitat Associated with Species of Local Importance

Habitat associated with species of local importance is regulated as a critical area unless otherwise designated as another type of critical area or critical area buffer (LUC 25.25H.150.B).

The entire project area is located within steep slope critical areas or slope and stream critical area buffers; therefore, habitats associated with species of local important are not separately designated as a critical area or provided additional protection. A habitat assessment is provided in Section 2.3.4 to identify the presence of habitat associated with species of local importance.

4 Project Description

4.1 Overview

The project will construct a soldier pile wall to stabilize the existing slope on the north side of NE 24th Street between 171st Avenue NE and 172nd Avenue NE. The work to be performed includes but is not limited to, traffic control; roadway excavation; removing existing pavement, curb and gutter, fence and guardrail; constructing storm drain pipes including storm structures, cement concrete curb and gutter, sidewalk, curb ramps, asphalt pavement, traffic barrier with pedestrian railing, guardrail and soldier pile wall with tiebacks; environmentally sensitive area buffer impact mitigation planting and restoration; grind and overlay of pavement; channelization and signing; and property restoration.

5 Impact Assessment

In total 10,345 square feet of combined permanent and temporary impacts are proposed. A discussion of each impact is provided in the following subsections.

5.1 Direct Effects

5.1.1 Permanent Impacts

The project proposes 4,455 square feet of permanent impacts in the combined stream buffer and steep slope critical areas. Permanent impacts are associated with the installation of a solider pile wall and slope stabilization. The physical wall structure and backfill will become part of the built road surface and be overlaid with a sidewalk and associated infrastructure. Additionally, a 4-foot strip to the north of the wall will be overlaid with quarry spalls and maintained to allow access. These impacts occur in a location generally vegetated with a mix of Himalayan blackberry and native trees.

Permanent impacts resulting from slope stabilization will result from replacement of existing soils with quarry spalls that are keyed into the slope. The modified rock substrate in this area would be inadequate for native plant growth and the establishment of large trees, and therefore, is considered a permanent impact. According to the geotechnical consultant for the project, HWA GeoSciences, placement of topsoil for a suitable planting medium in this location is

unsustainable and may erode or slough off downhill. The slope is too steep to retain topsoil and, should placement be proposed, it would be at significant risk of sliding or eroding into the stream channel below.

5.1.2 Temporary Impacts

Temporary impacts will result primarily from incidental and unavoidable construction disturbance. These are provided generally for the operation of large equipment to support retaining wall construction and slope stabilization. Temporary impacts are assumed to be the minimum required for construction. However, there are a few small areas where contractors may limit disturbance once construction is under way. Approximately 5,890 square feet of temporary impacts in the combined stream buffer and steep slope critical areas are anticipated.

Access on the western side of the slope stabilization location will necessitate an approximately 15-foot wide path for an excavator. All prudent efforts will be done to accomplish this without tree removal; however, we anticipate the removal of one significant tree that is in the pathway. Use of heavy equipment will result in temporary impacts to the north of the proposed retaining wall and surrounding the slope stabilization location.

A tree protection plan is provided to ensure that retained trees are not severely impacted. Action will be taken within steep slopes and stream buffers to prevent the compaction of soils and subsoils. Where this is not feasible, soils will be scarified and decompacted following construction to reduce surface soil compaction. Use of heavy machinery is limited to areas where necessary and measures will be taken to reduce the impacts of soil compaction.

The southernmost strip of temporary impacts is in a location that will become a vegetated strip within the road matrix. Current vegetation is primarily Himalayan blackberry in this location.

The project will result in the removal of 17 trees, of which 10 meet the criteria of a significant tree. One significant tree to be removed is an English holly (*Ilex aquifolium*) a species on the list of King County Noxious Weeds of Concern. Six trees are identified to remain as snags, of which four are classified as significant. All other removed trees will remain within the mitigation area as habitat logs. Significant tree removal will occur in both temporary and permanent impact areas.

5.2 Indirect Effects

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR § 1508.8).

The slope stabilization project is designed to maintain existing infrastructure; therefore, no indirect effects are anticipated compared to existing conditions.

5.3 Cumulative Impacts

Cumulative impact is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

Cumulative impacts are reasonably likely to occur that encroach on critical areas and their buffers with compensatory mitigation that result in no net loss of critical area function, when constructed in compliance with LUC 20.25H. In time, the culmination of many project with these effects will result in a lower total area of critical area habitat and buffers in exchange for higher quality habitat and buffers. As development and human populations increase within a confined space such as the City limits, critical area impacts are likely increase over time.

6 Mitigation

6.1 Mitigation Sequencing

Avoidance: The project avoids direct impacts to streams. Retaining wall and slope repair is unavoidable in support of essential road infrastructure and slope stabilization, necessary for safety and protection of existing assets.

Minimization: The project has been designed to minimize impacts in the stream buffer and steep slope critical areas to the amount practicable. Construction machinery will be allowed to impact slope vegetation only when absolutely necessary and no less impactful alternative is available. Work limits will be clearly defined to avoid incidental impacts and staging will not occur in critical areas or critical area buffers.

Mitigation: Stream buffer and steep slope critical area mitigation will be provided at a ratio greater than 1:1 to ensure functional lift of critical areas. 10,590 square feet of stream buffer and steep slope enhancement is proposed to compensate for 10,345 square feet of temporary and permanent impacts.

Monitoring

The mitigation area will be monitored for a period of five years to ensure successful establishment of native vegetation.

6.2 Proposed Mitigation

Mitigation is provided through buffer vegetation enhancement as compensation for permanent and temporary impacts. Mitigation for temporary and permanent impacts are proposed at a ratio greater than 1:1 to ensure a net increase of critical area function. This amounts to 10,590 square feet of stream buffer and steep slope critical area enhancement as compensation for 10,345 square feet of impacts.

A planting schedule of native trees, shrubs, and groundcovers is provided to allow for the regeneration of a forested plant assemblage typical to the ecoregion (Appendix A). The plant schedule has a high diversity of native species aimed to increase the probability of selecting suitable plants for the microclimate. The native plant palette is chosen to promote late-seral species and bypass the early stages of natural succession. High-density planting will allow the installed plants to outcompete most invasive species if properly maintained during the monitoring period.

The same planting schedule is applied to both mitigation for permanent and temporary impacts with the exception of the planter strip. Trees that are removed incidental to construction are to be retained in the mitigation area for habitat. A few trees that will be severely impacted in the root zone will be retained as snags to provide wildlife habitat for insects, woodpeckers, and cavity dwelling animals.

The planter strip will be planted with grass species to be determined by the City of Bellevue, and will be replacing an area currently vegetated with primarily Himalayan blackberry.

Mitigation will be maintained and monitored for a minimum of 5 years and until all performance standards have been achieved. Monitoring protocol and performance standards are described in the mitigation plan (Appendix A).

6.3 Functional Lift Analysis

Steep slope critical areas and stream buffers provide ecosystem functions associated with habitat, water quality, and slope stability. Slope stability and all other geotechnical assessment will be provided in a separate report by qualified engineers. This section focuses on the functional lift for habitat and water quality within identified critical areas.

Well-functioning stream buffers provide many benefits that include shading, improved microclimate, introduction of dead wood, allochthonous input, stabilization of erosion, filtration of sediment and runoff, bioattenuation of excess nutrients and pollutants, interception of rainfall, wildlife corridors, and habitat for riparian-associated species or other wildlife. The biotic and abiotic components of the buffer which provided these ecosystem services have the greatest potential when supported by native flora. Native plants improve habitat function

compared to exotic species due to their influence on providing complex forest structure, diverse food resources, and the niche habitat that has historically coevolved with native wildlife.

Project impacts result in vegetation removal including 10 significant trees within critical areas and their buffers. Much of the impacted area in both clearings and forest understory is heavily covered in Himalayan blackberry, an invasive species that outcompetes native plants and inhibits natural successional pathways. Critical area functions such as habitat, water quality, and slope stability are extremely limited where Himalayan blackberry dominates. Project impacts that remove trees and understory vegetation will result in an immediate loss of living biomass and open new forest clearings. Although, clearing is not the desired condition of a park site, increased heterogeneity of habitat types is associated with greater species diversity and may benefit disturbance-adapted wildlife.

Within five years, the installed vegetation is anticipated to have greater than 80% areal cover, which will provide both screening vegetation and limit the spread of invasive species. Installed tree and shrubs are anticipated to produce soft and hard mast that can be utilized by native wildlife. As the site matures and a closed forest canopy is formed among the overstory layer, shrubs will thin out and shade tolerant understory species will compose much of the understory.

The ability of a buffer to remove nutrients is more effective where precipitation and runoff either infiltrates or moves through the rooting zone of a forested buffer. Deep roots associated with trees and shrubs have greater benefit in slope stability and reducing nutrients compared to areas composed of grass or Himalayan blackberry. As the enhanced buffer matures, surface roots, woody debris, and understory species will also aid in the physical filtering of sediments and particulate matter.

The resulting mitigation area will eventually become a diverse native forest that will provide superior habitat and water quality functions compared to preexisting conditions.

7 Code Compliance

7.1 LUC 20.25H - Critical Areas Overlay District

Critical areas in Bellevue are regulated in LUC 20.25H – Critical Areas Overlay District. All development must be located outside of critical areas and their buffers except as described in LUC 20.25H.050.B.2 and LUC 20.25H.055. The project is an allowed use as discussed in Section 7.2.

7.2 LUC 20.25H.55 – Uses and Development Allowed Within Critical Areas

Pursuant to LUC 20.25H.055.B, repair and maintenance of public right-of-way, stabilization measures, construction staging, and utility systems are identified an allowed use. All project activities are within or accessory to these categories, and therefore, are allowed within critical areas and buffers. Allowed uses must be consistent with all applicable Bellevue codes including mitigation sequencing and performance standards.

7.3 LUC 20.25H.250(B) – Minimum Report Requirements

1. *Identification and classification of all critical areas and critical area buffers on the site;*
2. *Identification and characterization of all critical areas and critical area buffers on those properties immediately adjacent to the site;*

All critical areas and critical area buffers are identified in this report and in the mitigation plan (Appendix A).

3. *Identification of each regulation or standard of this code proposed to be modified;*

The project proposes temporary and permanent impacts within steep slopes critical areas and a stream buffer, but is an allowed use and consistent with the code requirements.

3. *A habitat assessment consistent with the requirements of LUC 20.25H.165;* *A typo in this code section resulted in multiple (3) in list and is continued here for consistency.

Habitat is assessed in Section 2.3.4 – Habitats Associated with Species of Local Importance. Habitat assessment performance are addressed below in Section 7.4.

4. *An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development;*

Cumulative impacts are discussed in Section 5.4 – Cumulative Impacts.

5. *An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this code, compared with the level of protection provided by the proposal. The analysis shall include:*
    a. *A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;*
    b. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development; and*

c. *A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development;*

Discussion of existing critical area functions is provided in Section 2.3 – Critical Areas. Critical area functions and values expected through application of standard regulations and functional lift evaluation is provided in Section 6.3 – Functional Lift Analysis.

6. *A discussion of the performance standards applicable to the critical area and proposed activity pursuant to LUC 20.25H.160, and recommendation for additional or modified performance standards, if any;*

All impacted habitat is within critical area buffer, therefore no additional or modified performance standards are proposed.

7. *A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any; and*

A mitigation plan has been developed to meet the requirements of the LUC. No additional or modified mitigation is proposed.

8. *Any additional information required for the specific critical area as specified in the sections of this part addressing that critical area.*

None at this time.

7.4 LUC 20.25H.165(A) – Habitat Assessment Performance Standards

1. *Detailed description of vegetation and habitat on and adjacent to the site;*

See Section 2 – Existing Conditions.

2. *Identification of any species of local importance that have a primary association with habitat on or adjacent to the site and assessment of potential project impacts to the use of the site by the species;*

Species of local importance are discussed in Section 2.3.4 – Habitats Associated with Species of Local Importance.

3. *A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the site;*

Since all impacted area is already encumbered by critical areas and their buffer, special management recommendations do not apply. Management recommendations when required are provided in Section 2.3.4 – Habitats Associated with Species of Local Importance.

4. *A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality;*

See Section 5 – Impact Assessment.

5. *A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed use or activity and to be conducted in accordance with the mitigation sequence set forth in LUC 20.25H.215; and*

Mitigation sequencing is demonstrated in Section 6.1 – Mitigation Sequencing.

6. *A discussion of ongoing management practices that will protect habitat after the site has been developed, including proposed monitoring and maintenance programs.*

A mitigation plan has been developed, described in Section 6.2 – Proposed Mitigation, and included as Appendix A, which includes five years of mitigation site monitoring and maintenance.

7.5 LUC 20.25H.080 – Stream Performance Standards

Modification of a stream or wetland buffer requires the applicant to show compliance with the specific performance standards for streams and wetlands as set forth in LUC 20.25H.080. Compliance with the applicable criteria listed in LUC 20.25H.080 is addressed below.

1. *Lights shall be directed away from the stream.*

The project does not propose the installation of any lights.

2. *Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the stream/wetland, or any noise shall be minimized through use of design and insulation techniques.*

The project provides slope stability to protect existing infrastructure and will not result in the generation of additional noise, outside of temporary construction impacts. A slight modification in road noise may be realized, although this is not a design criteria for the project.

3. *Toxic runoff from new impervious area shall be routed away from the stream/wetlands.*

1,543 square feet of new pollution generating impervious surface is proposed but will be routed away from the stream. Existing vegetation, as well as the addition of dense native plantings in the overlapping stream and wetland buffers improve water quality buffer functions.

4. *Treated water may be allowed to enter the stream.*

No additional treatment of water is proposed.

5. *The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use.*

The entire stream buffer will be planted with dense vegetation within the project area.

6. *Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.*

Any applications will be conducted in accordance with the City of Bellevue's "Environmental Best Management Practices."

7. *All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met.*

All standards associated with Chapter 24.06 will be met.

8 Summary

The proposed project will construct a retaining wall and repair a failing slope with quarry spalls. In total, 10,345 square feet of permanent and temporary impacts are anticipated in steep slope critical areas and a stream buffer. Compensatory mitigation will include 10,590 square feet of enhancement in the steep slope critical area and stream buffer. The proposed project has been designed to meet the criteria of Bellevue LUC 20.25H – Critical Areas Overlay District. No net loss of critical area function will result from the project.

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Appendix A

MITIGATION PLAN

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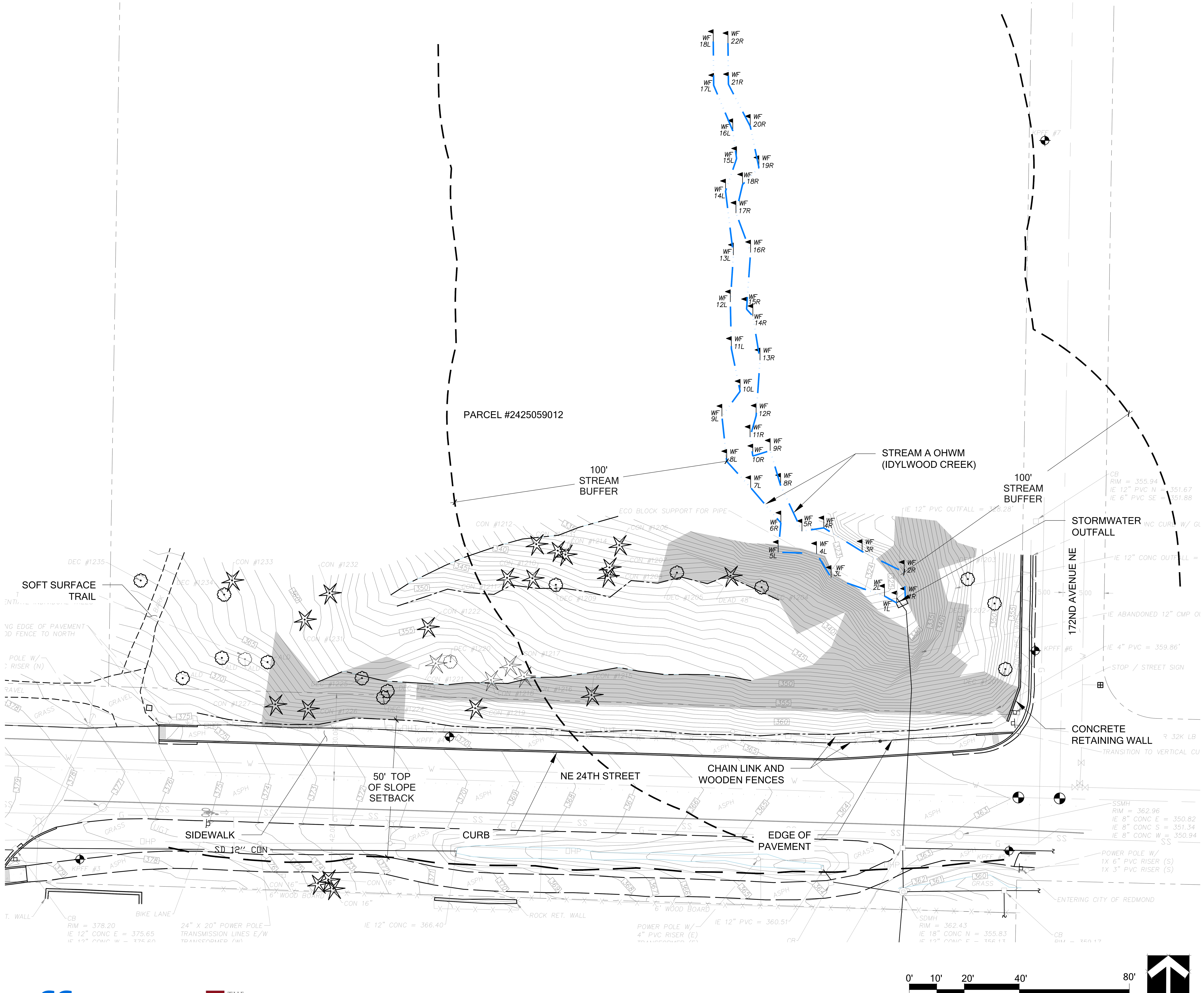
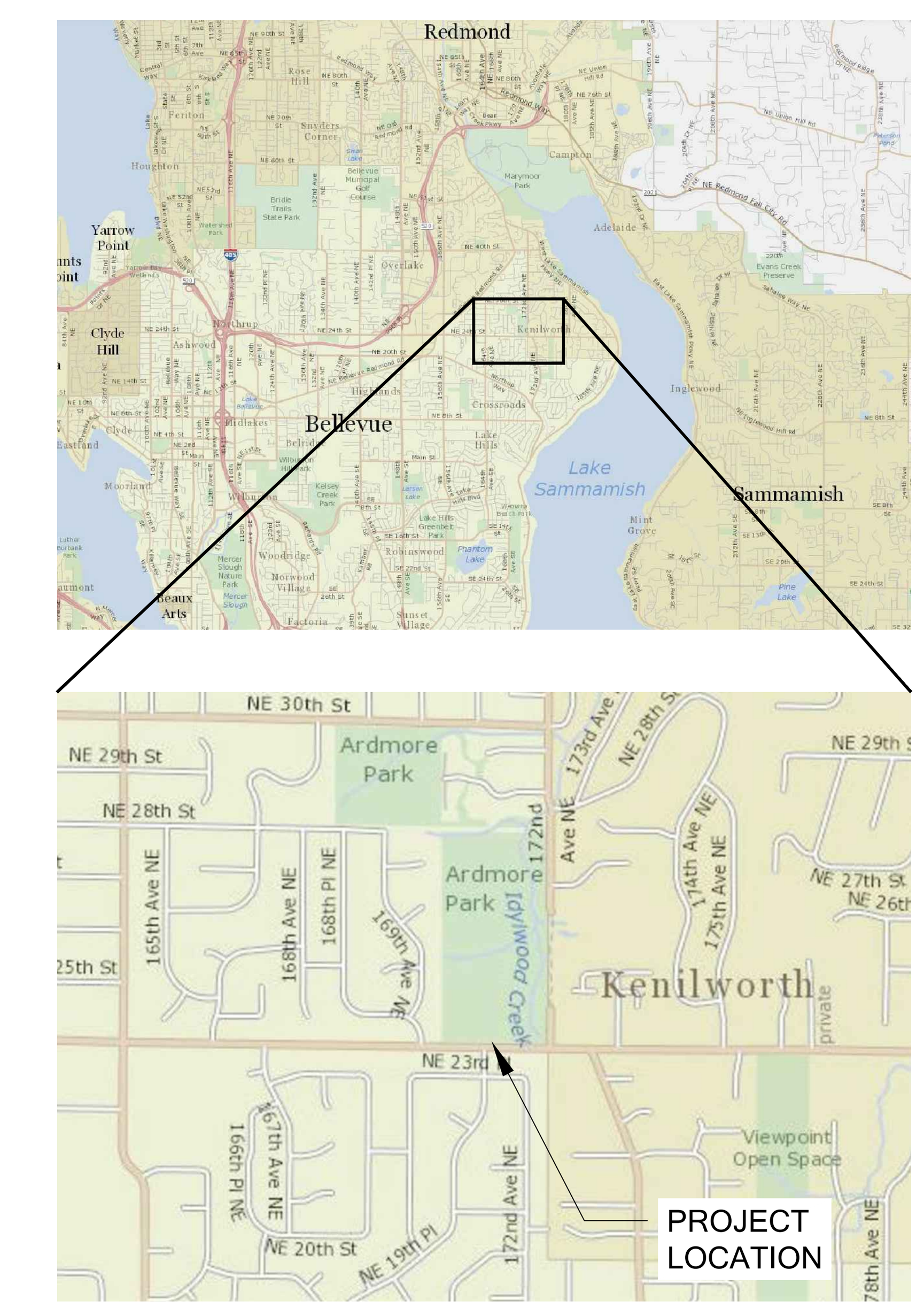


NOTES

1. STREAM OHWM DELINEATED BY THE WATERSHED COMPANY ON JULY 23, 2019 (750 6TH STREET SOUTH; KIRKLAND, WA 98033; 425-9822-5242). SEE CRITICAL AREAS REPORT REPORT BY THE WATERSHED COMPANY (DATED MAY 2020) FOR FURTHER DETAILS.
2. SURVEY PROVIDED BY KPFF ON APRIL 15, 2020 (612 WOODLAND SQUARE LOOP SE, SUITE 100; LACY, WA 98503; 360-292-7230.
3. THIS MITIGATION PLAN IS NOT INTENDED TO STABILIZE THE SLOPES DEPICTED. THE SLOPE STABILIZATION ELEMENT OF THIS PROJECT IS LOCATED ABOVE THE STORMWATER OUTFALL AND IS DETAILED IN THE CIVIL PLANS.

SHEET INDEX



VICINITY MAP
NTS

LEGEND

- PARCEL BOUNDARY
- STREAM OHWM
- TYPE F STREAM BUFFER, APPROXIMATE (100')
- STEEP SLOPE AREA
- TOE OF SLOPE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK (50')
- INVENTORIED TREE

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NO.	DATE	BY	APPR.	REVISIONS

R. HOHLFELD	06/23
DESIGNED BY	DATE
R. HOHLFELD	06/23
DRAWN BY	DATE
M. FRENCH	06/23
CHECKED BY	DATE

City of Bellevue
Transportation Department

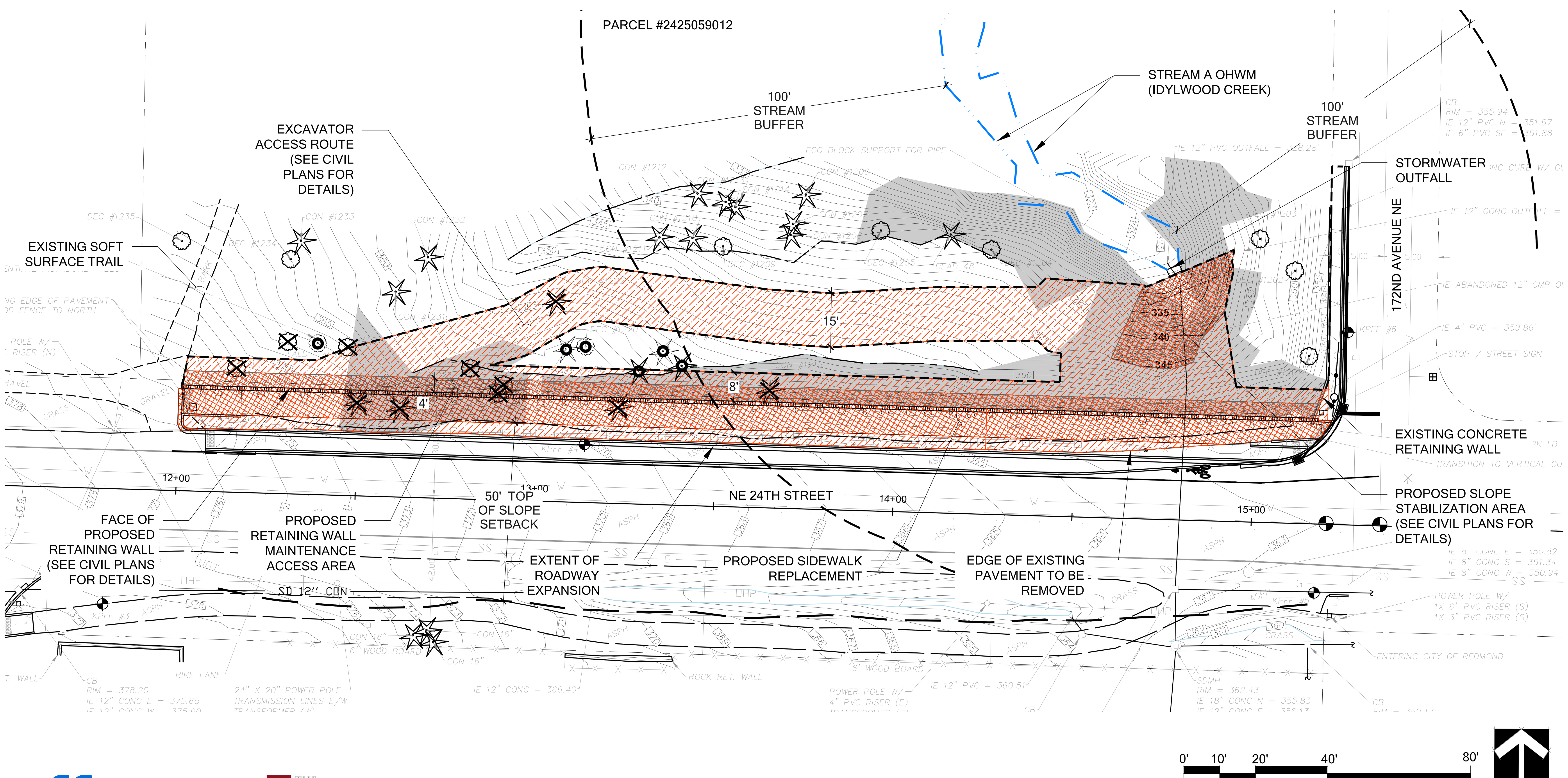
STATE OF WASHINGTON — MARINA SIMONE FRENCH — LICENSED LANDSCAPE ARCHITECT — NO. 1459 EXP. 07/20/20

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE
EXISTING CONDITIONS

SHT W1 OF 8

ROEN HOHLFELD; 6/23/2020 3:20 PM; H:\PROJECTS\2018\06 - June\180601 - KPFF Bellevue Transportation Eng On-call\180601.1- KPFF Bellevue General Transpo On-Call-TO 12\CAD\180601.1 NE 24th St Bellevue Mitigation Plan.dwg



NOTES

1. SITE PLAN BY KPFF ON APRIL 22, 2020 (612 WOODLAND SQUARE LOOP SE, SUITE 100; LACY, WA 98503; 360-292-7230.
2. SEE THE ARBORIST REPORT BY THE WATERSHED COMPANY (DATED JUNE 23, 2020) FOR COMPLETE TREE INVENTORY, RETENTION, AND PROTECTION DETAILS.
3. SEE SHEET W3 FOR TREE RETENTION AND REMOVAL PLAN.

LEGEND

EXISTING CONDITIONS

- PARCEL BOUNDARY
- STREAM OHWM
- TYPE F STREAM BUFFER, APPROXIMATE (100')
- STEEP SLOPE AREA
- TOE OF SLOPE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK (50')
- INVENTORIED TREE

PROPOSED CONDITIONS

- LIMITS OF DISTURBANCE
- PERMANENT BUFFER / STEEP SLOPE IMPACT (4,455 SF)
- TEMPORARY BUFFER / STEEP SLOPE IMPACT (5,890 SF)
- TREE REMOVAL (11)
- TREE TO BE SNAGGED (6)

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R. HOHLFELD DRAWN BY	06/23 DATE
M. FRENCH CHECKED BY	06/23 DATE

City of Bellevue
Transportation Department

STATE OF WASHINGTON MARINA SIMONE FRENCH NO. 1459 EXP. 07/20/20 LICENSED LANDSCAPE ARCHITECT

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

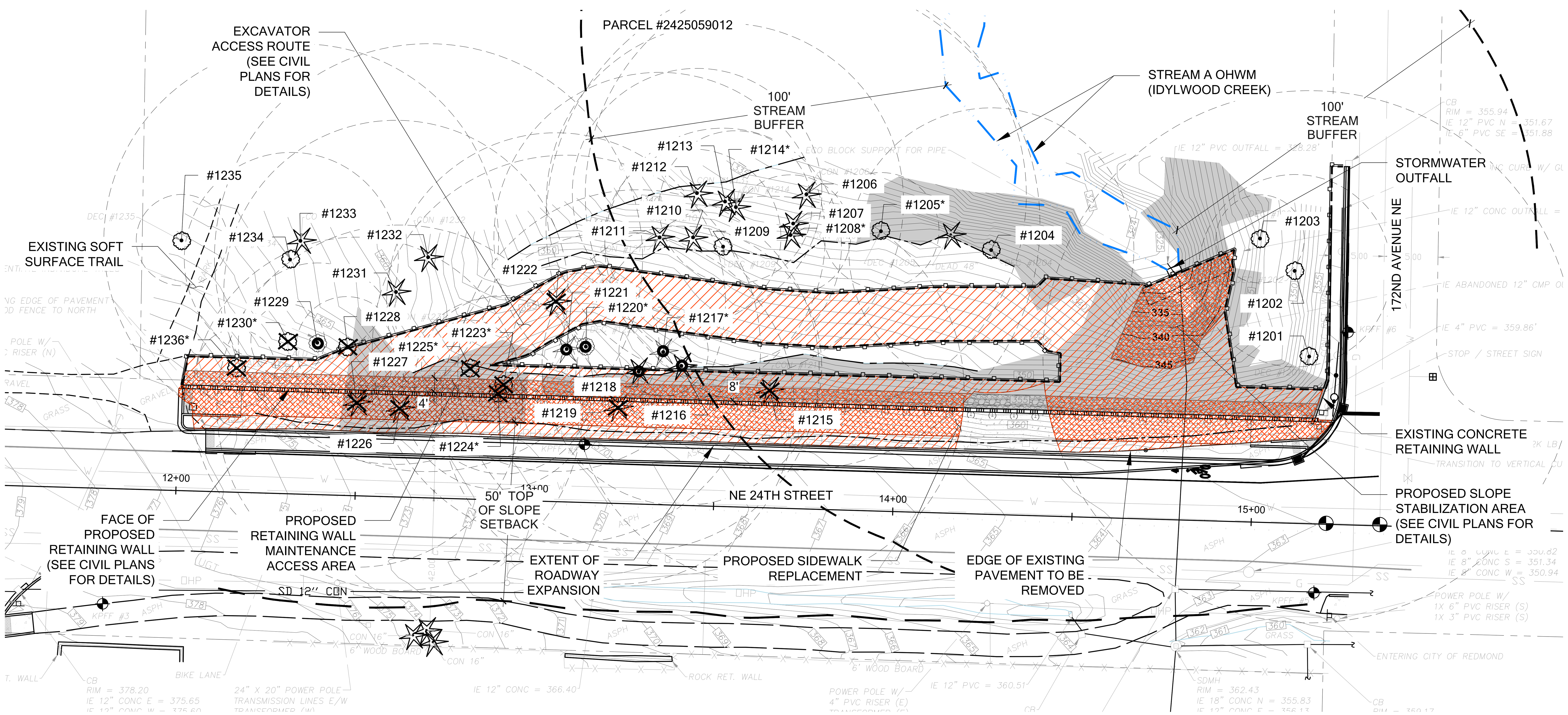
NE 24th ST AT 172nd AVE NE
IMPACT ASSESSMENT

SHT W2 OF 8

TREE RETENTION TABLE

TREE REMOVAL TABLE

TAG #	TREE NAME	COMB DBH (IN)	CONDITION	SIGNIFICANT PER BELLEVUE LUC	NOTES
1215	Pseudotsuga menziesii (Douglas-fir)	**39.5**	Fair	Y	LWD
1216	Pseudotsuga menziesii (Douglas-fir)	**26.0**	Fair	Y	Retain and monitor if feasible or snag and leave in place / LWD
1217	Cornus nuttallii (Pacific dogwood)	**8.3**	Very Poor	N	Retain and monitor if feasible or snag and leave in place / LWD
1218	Pseudotsuga menziesii (Douglas-fir)	**33.6**	Fair	Y	Retain and monitor if feasible or snag and leave in place / LWD
1219	Pseudotsuga menziesii (Douglas-fir)	**32.8**	Fair	Y	LWD
1220	Acer macrophyllum (Bigleaf maple)	**13.7**	Poor	N	Retain and monitor if feasible or snag and leave in place / LWD
1221	Pseudotsuga menziesii (Douglas-fir)	**36.1**	Fair	Y	Retain and monitor if feasible or snag and leave in place / LWD
1222	Pseudotsuga menziesii (Douglas-fir)	**31.5**	Fair	Y	LWD
1223	Acer macrophyllum (Bigleaf maple)	**16.6**	Poor	N	LWD
1224	Acer macrophyllum (Bigleaf maple)	**17.9**	Poor	N	LWD
1225	Acer macrophyllum (Bigleaf maple)	**9.0**	Poor	N	LWD
1226	Pseudotsuga menziesii (Douglas-fir)	**34.0**	Fair	Y	LWD
1227	Pseudotsuga menziesii (Douglas-fir)	**30.7**	Fair	Y	LWD
1228	Ilex aquifolium (English holly)	**9.4**	Fair	Y	Remove from site
1229	Alnus rubra (Red alder)	**14.8**	Fair	Y	Retain and monitor if feasible or snag and leave in place / LWD
1230	Ilex aquifolium (English holly)	**10.3**	Very Poor	N	Remove from site
1236	Ilex aquifolium (English holly)	**7.3**	Fair	N	Remove from site



NOTES

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2. SEE THE ARBORIST REPORT BY THE WATERSHED COMPANY (DATED JUNE 23, 2020) FOR COMPLETE TREE INVENTORY, RETENTION, AND PROTECTION DETAILS.
3. NOT ALL TREES SHOWN ON THE PLAN ARE REGULATED AS SIGNIFICANT TREES DUE TO FACTORS SUCH AS CONDITION OR SIZE. TREE TAG LABELS WITH AN ASTERISK ARE NON-SIGNIFICANT.
4. TREE PROTECTION ZONES ARE DEFINED AS A RADIUS OF 1.5 FEET FOR EVERY INCH OF DBH.
5. SEE TREE REMOVAL TABLE NOTES FOR DETAILS ON PROPOSED REMOVALS.
6. SEE MITIGATION PLAN ON SHEET W5 FOR LWD PLACEMENT; SEE SHEET W4 FOR SNAGGING, LARGE WOODY DEBRIS (LWD) AND TREE PROTECTION FENCING INSTALLATION DETAILS

LEGEND

EXISTING CONDITIONS

- PARCEL BOUNDARY
- STREAM OHWM
- TYPE F STREAM BUFFER, APPROXIMATE (100')
- STEEP SLOPE AREA
- TOE OF SLOPE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK (50')
- INVENTORIED TREE
- TREE PROTECTION ZONE (TPZ)

PROPOSED CONDITIONS

- LIMITS OF DISTURBANCE
- TREE PROTECTION FENCING (B / W4)
- PERMANENT CRZ DISTURBANCE
- TEMPORARY CRZ DISTURBANCE
- TREE REMOVAL (11)
- TREE TO BE SNAGGED (6) (A / W4)

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R. HOHLFELD 06/23 — DESIGNED BY / DATE
R. HOHLFELD 06/23 — DRAWN BY / DATE
M. FRENCH 06/23 — CHECKED BY / DATE

City of Bellevue
Transportation Department

STATE OF WASHINGTON — MARINA SIMONE FRENCH — LICENSED LANDSCAPE ARCHITECT — NO. 1459 EXP. 07/20/20

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

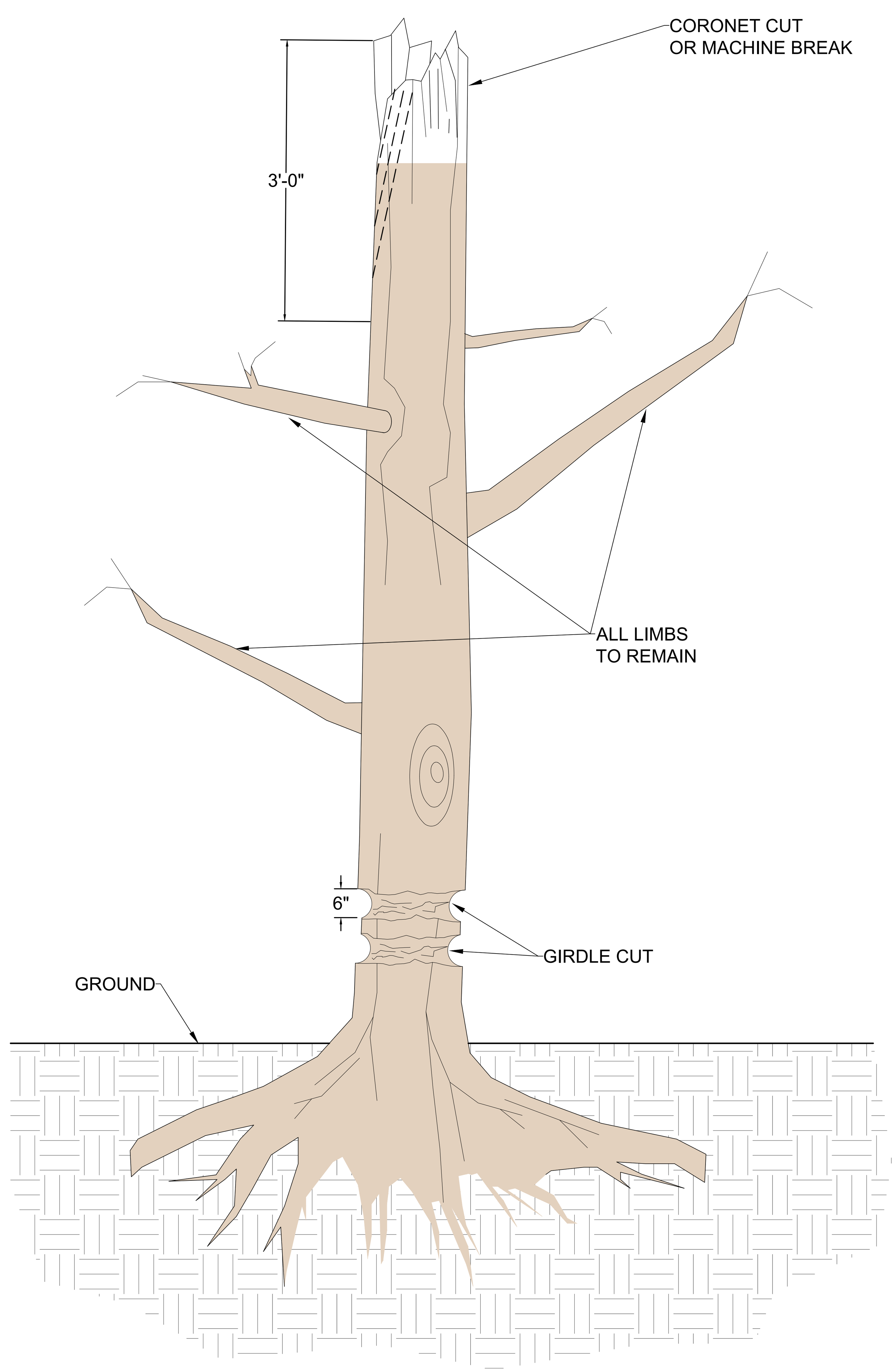
NE 24th ST AT 172nd AVE NE
TREE RETENTION AND REMOVAL PLAN

SHT W3 OF 8

SNAG NOTES:

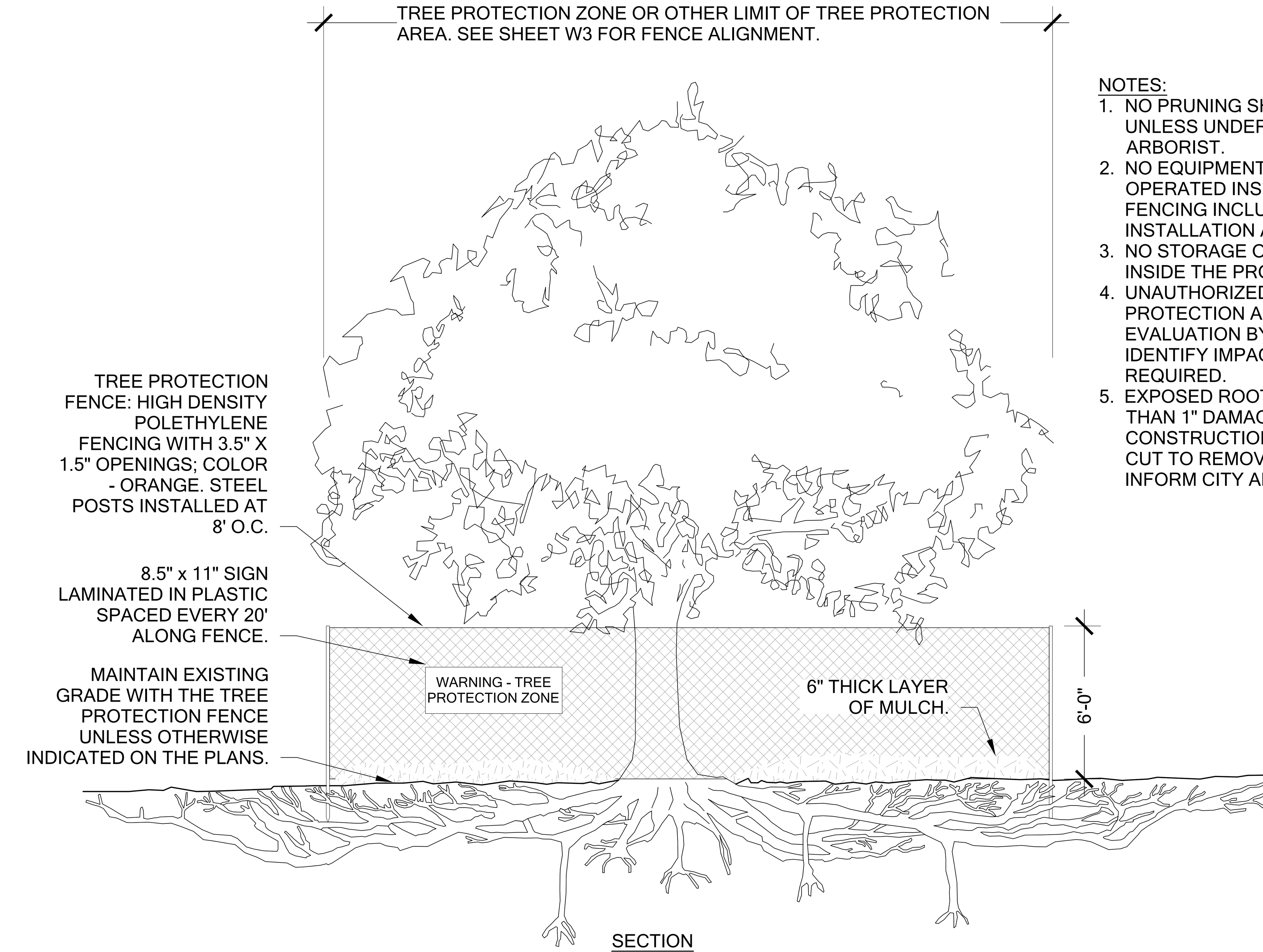
SEE TREE REMOVAL TABLE FOR TREES WHICH ARE TO BE RETAINED AS SNAGS.

1. SNAGS ON SITE ARE TO BE TOPPED BY CLIMBING ARBORIST OR BROKEN WITH MACHINE.
2. ONCE TOP HAS BEEN REMOVED ARBORIST IS TO MAKE A CORONET CUT TO GIVE A NATURAL BREAK APPEARANCE IF BROKEN BY MACHINE CORONET CUT IS NOT NECESSARY.
3. RETAIN ALL BRANCHES FOR PERCHES AND HABITAT STRUCTURES- DO NOT LIMB.
4. LIVE TREES SHOULD BE DEADENED BY CUTTING TWO 6” WIDE, ANGLED BAND AROUND THE BASE OF THE TREE WITH AN AXE OR BY MAKING TWO CUTS AROUND THE TREE WITH A CHAIN SAW TO A DEPTH OF APPROXIMATELY 1 INCH BELOW THE BARK LAYER.
5. WATERSPOUTS MAY DEVELOP BELOW GIRDLING CUT DEPENDING ON SPECIES. THESE SHOULD BE REMOVED WITH ROUTINE MAINTENANCE AND MONITORING.



A SNAG CREATION

Scale: NTS



NOTES:

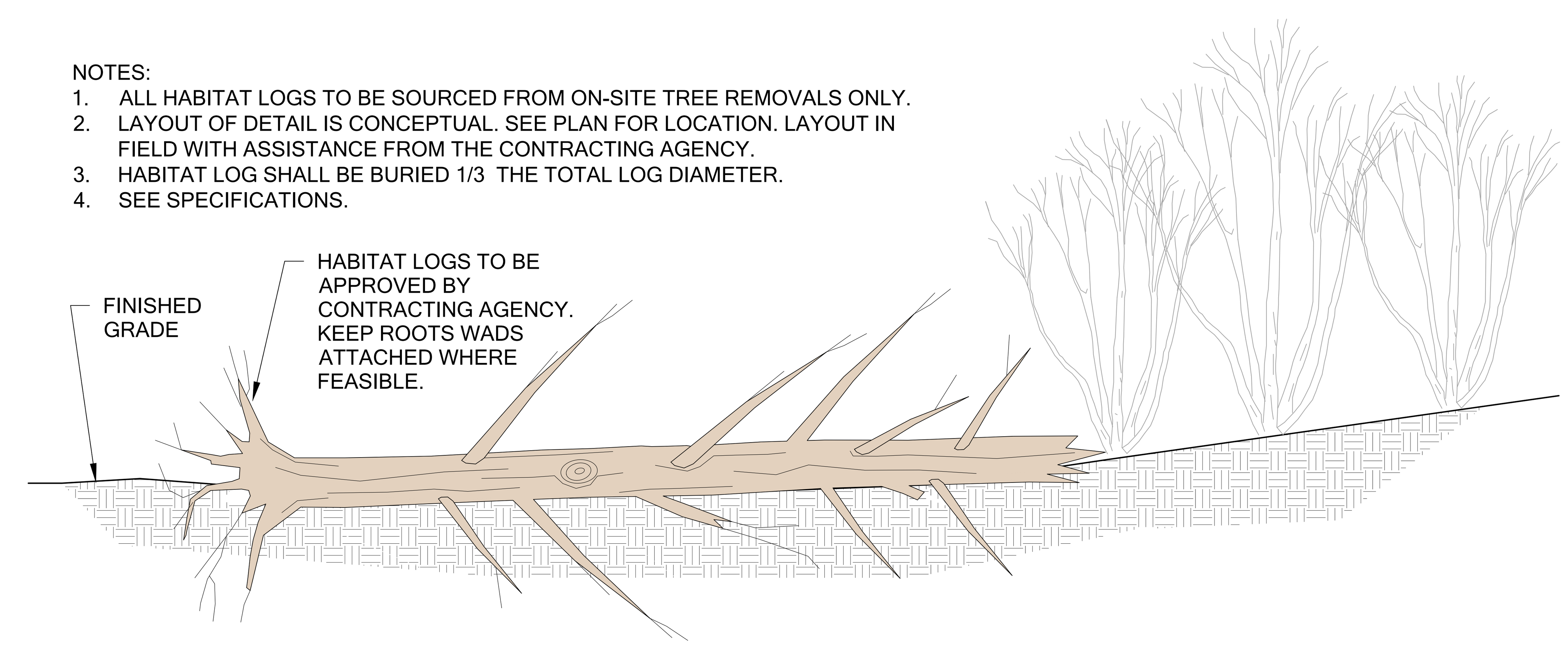
1. NO PRUNING SHALL BE PERFORMED UNLESS UNDER THE DIRECTION OF AN ARBORIST.
2. NO EQUIPMENT SHALL BE STORED OR OPERATED INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
3. NO STORAGE OF MATERIALS SHALL OCCUR INSIDE THE PROTECTIVE FENCING.
4. UNAUTHORIZED ACTIVITIES IN TREE PROTECTION AREA MAY REQUIRE EVALUATION BY PRIVATE ARBORIST TO IDENTIFY IMPACTS AND MITIGATION REQUIRED.
5. EXPOSED ROOTS: FOR ROOTS GREATER THAN 1" DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION AND INFORM CITY ARBORIST.

B TREE PROTECTION FENCING

Scale: NTS

NOTES:

1. ALL HABITAT LOGS TO BE SOURCED FROM ON-SITE TREE REMOVALS ONLY.
2. LAYOUT OF DETAIL IS CONCEPTUAL. SEE PLAN FOR LOCATION. LAYOUT IN FIELD WITH ASSISTANCE FROM THE CONTRACTING AGENCY.
3. HABITAT LOG SHALL BE BURIED 1/3 THE TOTAL LOG DIAMETER.
4. SEE SPECIFICATIONS.



C LARGE WOODY DEBRIS

Scale: NTS

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STATE OF WASHINGTON
MARINA SIMONE FRENCH
NO. 1459 EXP. 07/20/20
LICENSED LANDSCAPE ARCHITECT

NE 24TH ST AT 172ND AVE NE
SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE
TREE PROTECTION AND REMOVAL DETAILS

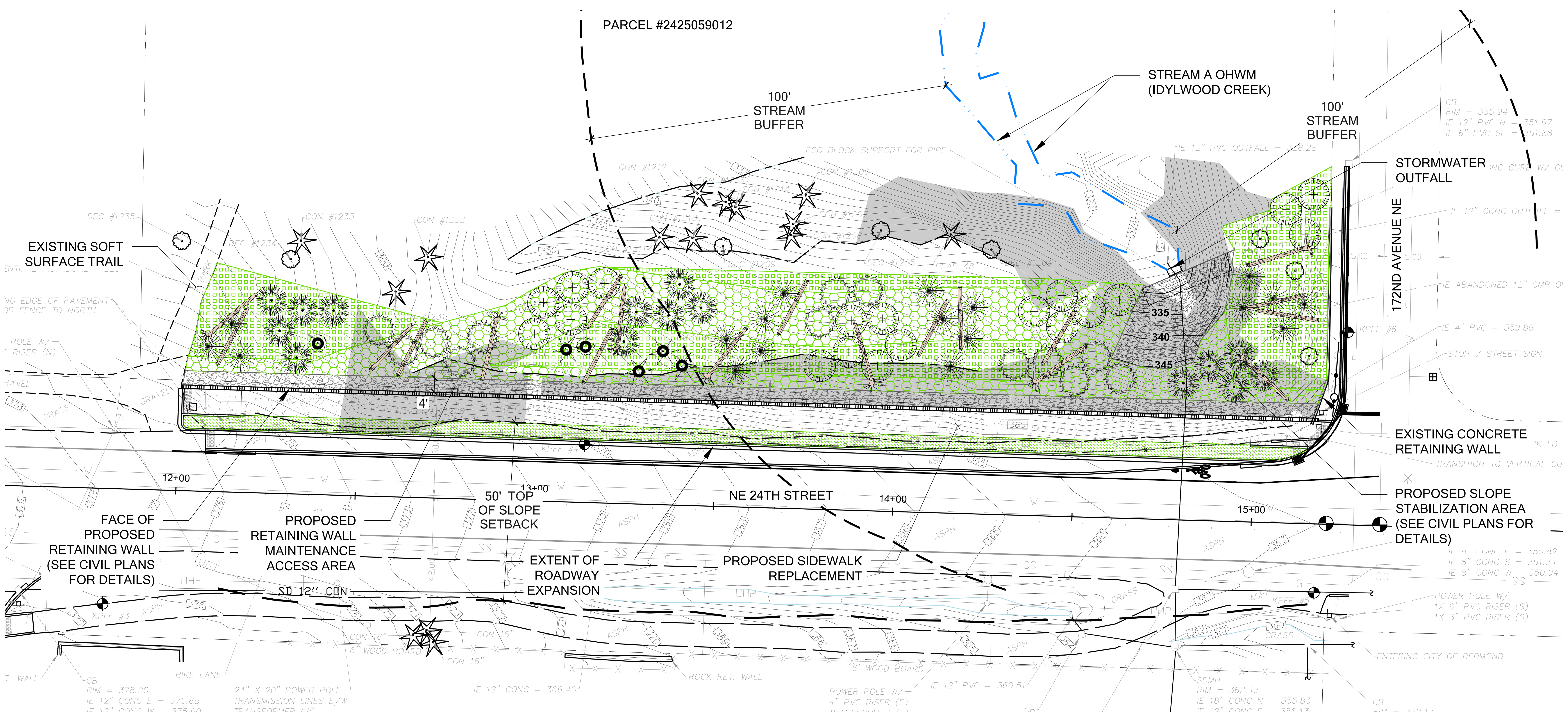
SHT W4 OF 8

ROEN HOHLFELD; 6/23/2020 3:20 PM; H:\PROJECTS\2018\06 - June\180601 - KPFF Bellevue Transportation Eng On-call\180601.1- KPFF Bellevue General Transpo On-Call-TO 12\CAD\180601.1 NE 24th St Bellevue Mitigation Plan.dwg

MITIGATION AND RESTORATION AREAS PLANT SCHEDULE (9,365 SF)

BOTANICAL NAME / COMMON NAME	QTY.	SIZE	SPACING
TREES			
ACER MACROPHYLLUM / BIGLEAF MAPLE	15	1 GAL.	PER PLAN
PSEUDOTSUGA MENZIESII / DOUGLAS-FIR	18	1 GAL.	PER PLAN
THUJA PLICATA / WESTERN RED CEDAR	19	1 GAL.	PER PLAN
TSUGA HETEROPHYLLA / WESTERN HEMLOCK	13	1 GAL.	PER PLAN
TOTAL TREE QUANTITY:	65		

BOTANICAL NAME / COMMON NAME	QTY.	SIZE	SPACING
SHRUBS			
ACER CIRCINATUM / VINE MAPLE	40	1 GAL.	5' O.C.
AMELANCHIER ALNIFOLIA / SERVICEBERRY	40	1 GAL.	5' O.C.
CORYLUS CORNUTA / BEAKED HAZELNUT	40	1 GAL.	5' O.C.
OEMLERIA CERASIFORMIS / OSOBERRY	40	1 GAL.	5' O.C.
RIBES SANGUINIUM / RED-FLOWERING CURRANT	40	1 GAL.	5' O.C.
ROSA NUTKANA / NOOTKA ROSE	40	1 GAL.	5' O.C.
RUBUS PARVIFLORUS / THIMBLEBERRY	40	1 GAL.	5' O.C.
RUBUS SPECTABILIS / SALMONBERRY	40	1 GAL.	5' O.C.
SALIX SCOULERIANA / SCOULER'S WILLOW	40	1 GAL.	5' O.C.
SAMBUCUS RACEMOSA / RED ELDERBERRY	40	1 GAL.	5' O.C.
SYMPHORICARPOS ALBUS / SNOWBERRY	40	1 GAL.	5' O.C.
TOTAL SHRUB QUANTITY:	440		
GROUNDCOVERS			
GAULTHERIA SHALLON / SALAL	275	1 GAL.	3' O.C.
MAHONIA NERVOSA / DULL OREGON GRAPE	275	1 GAL.	3' O.C.
POLYSTICHUM MUNITUM / WESTERN SWORDFERN	275	1 GAL.	3' O.C.
TOTAL GROUNDCOVER QUANTITY:	825		
TOTAL PLANT QUANTITY:	1,390		



NOTES

1. PLANT INSTALLATION SHALL PRESERVE ALL EXISTING NATIVE VEGETATION. WORK WITHIN ROOT ZONES OF TREES TO REMAIN SHALL BE DONE BY HAND; SEE SHEET W3 FOR TREE RETENTION AND REMOVAL PLAN.
2. SHRUBS AND GROUNDCOVERS TO BE SPACED TRIANGULARLY AND DISTRIBUTED BY SPECIES IN GROUPS OF 9-15.
3. SEE SHEET W7 FOR PLANT INSTALLATION SPECIFICATIONS.
4. SEE SITE PREPARATION PLAN ON SHEET W6; SEE SHEET W7 FOR SITE PREPARATION DETAILS.

LEGEND

EXISTING CONDITIONS

- PARCEL BOUNDARY
- STREAM OHWM
- TYPE F STREAM BUFFER, APPROXIMATE (100')
- STEEP SLOPE AREA
- TOE OF SLOPE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK (50')
- INVENTORIED TREE

PROPOSED CONDITIONS

- BUFFER / STEEP SLOPE MITIGATION AREA (4,455 SF)
- TEMPORARY CONSTRUCTION IMPACT AREA TO BE RESTORED IN PLACE (4,910 SF)
- PLANTER STRIP HYDROSEED AREA (PER CITY OF BELLEVUE, 1,225 SF)
- LARGE WOODY DEBRIS FROM ON-SITE REMOVALS (C / W4)
- SNAGGED TREE (A / W4)

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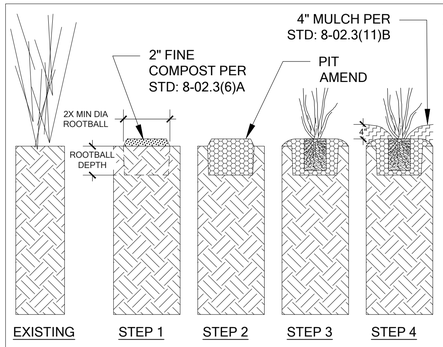
STATE OF WASHINGTON — MARINA SIMONE FRENCH — LICENSED LANDSCAPE ARCHITECT — NO. 1459 EXP. 07/20/20

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE

MITIGATION AND PLANTING PLAN

SHT W5 OF 8



PLANTING AREA PREPARATION

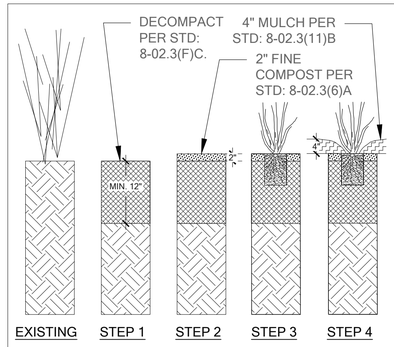
STEP 1
REMOVE UNDESIRABLE SPECIES. TREAT PLANTING AREAS PER CONTRACT REQUIREMENTS. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND.

STEP 2
PLACE 0.13 CF / 1 GALLON OF FINE COMPOST PER STD: 8-02.3(6)A IN EACH PLANTING PIT AND MIX WITH EXCAVATED SOIL.

STEP 3
LEAVE MINIMUM ONE (1) INCH LAYER OF AMENDED SOIL AT THE BOTTOM OF THE PIT THEN INSTALL PLANTS (SEE PLANTING DETAIL). BACKFILL WITH AMENDED SOIL.

STEP 4
PLACE MULCH LAYER FOUR (4) INCHES DEEP. HOLD BACK MULCH FROM TRUNKS / STEMS.

SOIL PREPARATION: PIT AMEND EXISTING SOILS
SEQUENCE OF WORK - NOT TO SCALE



PLANTING AREA PREPARATION

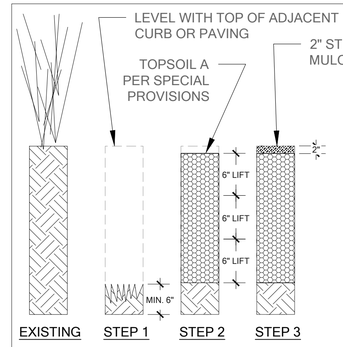
STEP 1
REMOVE UNDESIRABLE SPECIES. TREAT PLANTING AREAS PER CONTRACT REQUIREMENTS. ASSESS COMPACTION PER STD: 2.15.4.13.2. DECOMPACT PER STD: 8.02.3(F)C. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND.

STEP 2
PLACE FINE COMPOST PER STD: 8-02.3(6)A.

STEP 3
INSTALL PLANTS (SEE PLANTING DETAIL) THROUGH COMPOST BLANKET.

STEP 4
COVER WITH A 4-INCH LAYER OF MULCH PER STD: 8-02.3(11)B, EVENLY APPLIED TO THE ENTIRE AREA. MULCH SHALL NOT CONTACT THE STEMS OF TREES AND SHRUBS

SOIL PREPARATION: AMEND EXISTING SOILS
SEQUENCE OF WORK - NOT TO SCALE



PLANTING AREA PREPARATION

STEP 1
EXCAVATE EXISTING SOIL TO 24 INCH DEPTH BELOW ADJACENT CURB OR PAVING. DO NOT EXCAVATE WITHIN ROOT ZONE OF EXISTING TREES TO REMAIN. SCARIFY TO A MIN SIX (6) INCH DEPTH.

STEP 2
PLACE MIN 18 INCH DEPTH OF TOPSOIL TYPE A PER SPECIAL PROVISIONS IN SIX (6) INCH LIFTS. WATER SETTLE/COMPACT BETWEEN LIFTS.

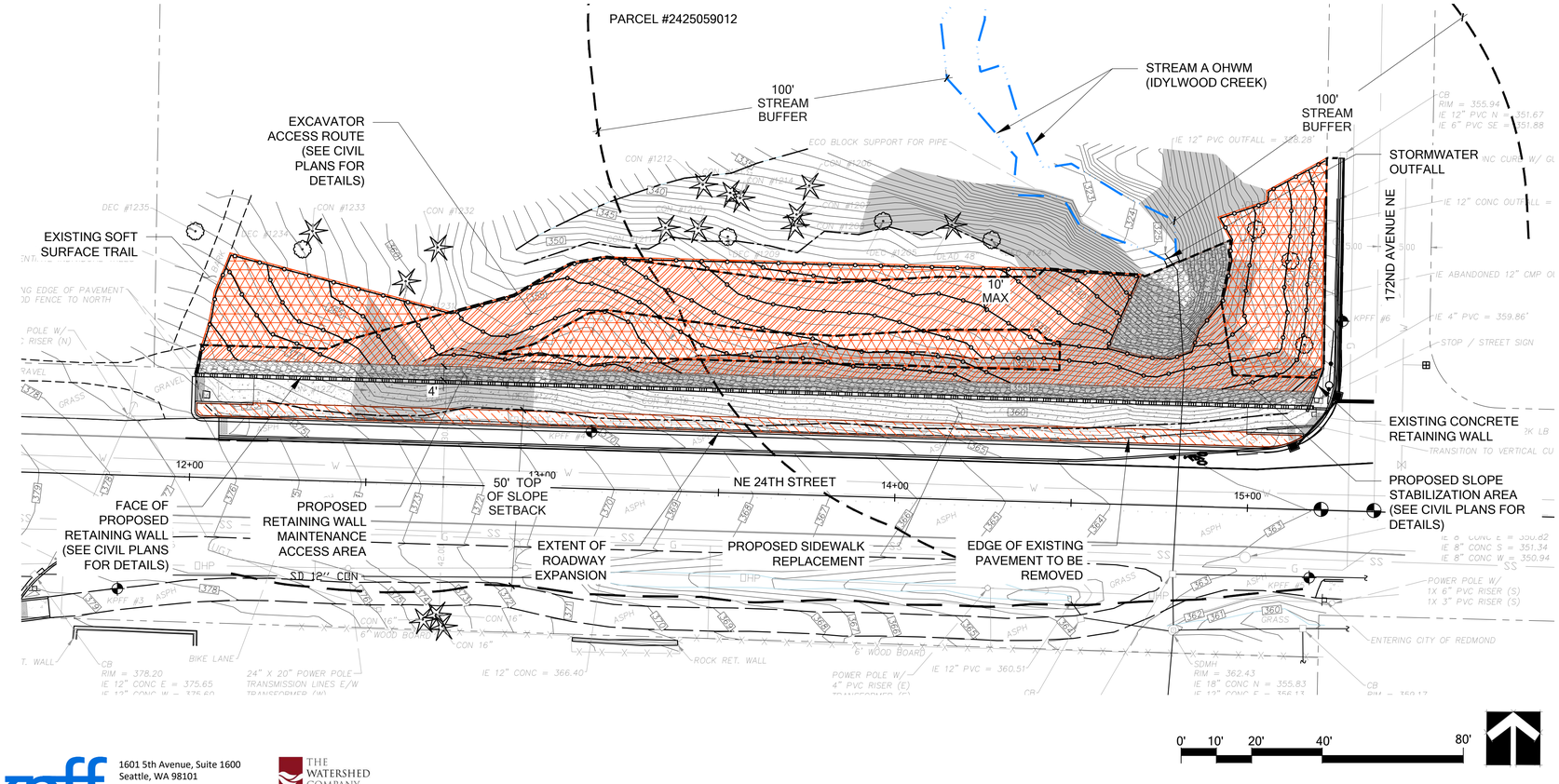
STEP 3
PLACE TWO (2) INCH LAYER OF STRAW MULCH AND INSTALL SPECIFIED SEED.

SOIL PREPARATION: IMPORT TOPSOIL
SEQUENCE OF WORK - NOT TO SCALE

A TYPE A SITE PREPARATION
Scale: NTS

B TYPE B SITE PREPARATION
Scale: NTS

C TYPE C SITE PREPARATION
Scale: NTS



NOTES
1. SITE PREPARATION ACTIVITES SHALL PRESERVE ALL EXISTING NATIVE VEGETATION. WORK WITHIN ROOT ZONES OF TREES TO REMAIN SHALL BE DONE BY HAND; SEE SHEET W3 FOR TREE RETENTION AND REMOVAL PLAN.

LEGEND

EXISTING CONDITIONS
- PARCEL BOUNDARY
- STREAM OHWM
- TYPE F STREAM BUFFER, APPROXIMATE (100')
- STEEP SLOPE AREA
- TOE OF SLOPE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK (50')
- INVENTORIED TREE

PROPOSED CONDITIONS
- LIMITS OF DISTURBANCE
- TYPE A SITE PREPARATION (4,455 SF) (A / W6)
- TYPE B SITE PREPARATION (4,910 SF) (B / W6)
- TYPE C SITE PREPARATION (1,225 SF) (C / W6)
- COIR LOG (A / W7)

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NO.	DATE	BY	APPR.	REVISIONS

R. HOHLFELD 06/23 DESIGNED BY DATE
R. HOHLFELD 06/23 DRAWN BY DATE
M. FRENCH 06/23 CHECKED BY DATE

City of Bellevue
Transportation Department

STATE OF WASHINGTON · MARINA SIMONE FRENCH · 22459 · EXP. 07/19/20 · LICENSED LANDSCAPE ARCHITECT

NE 24TH ST AT 172ND AVE NE SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE
SITE PREPARATION PLAN AND DETAILS

SHT W6 OF 8

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

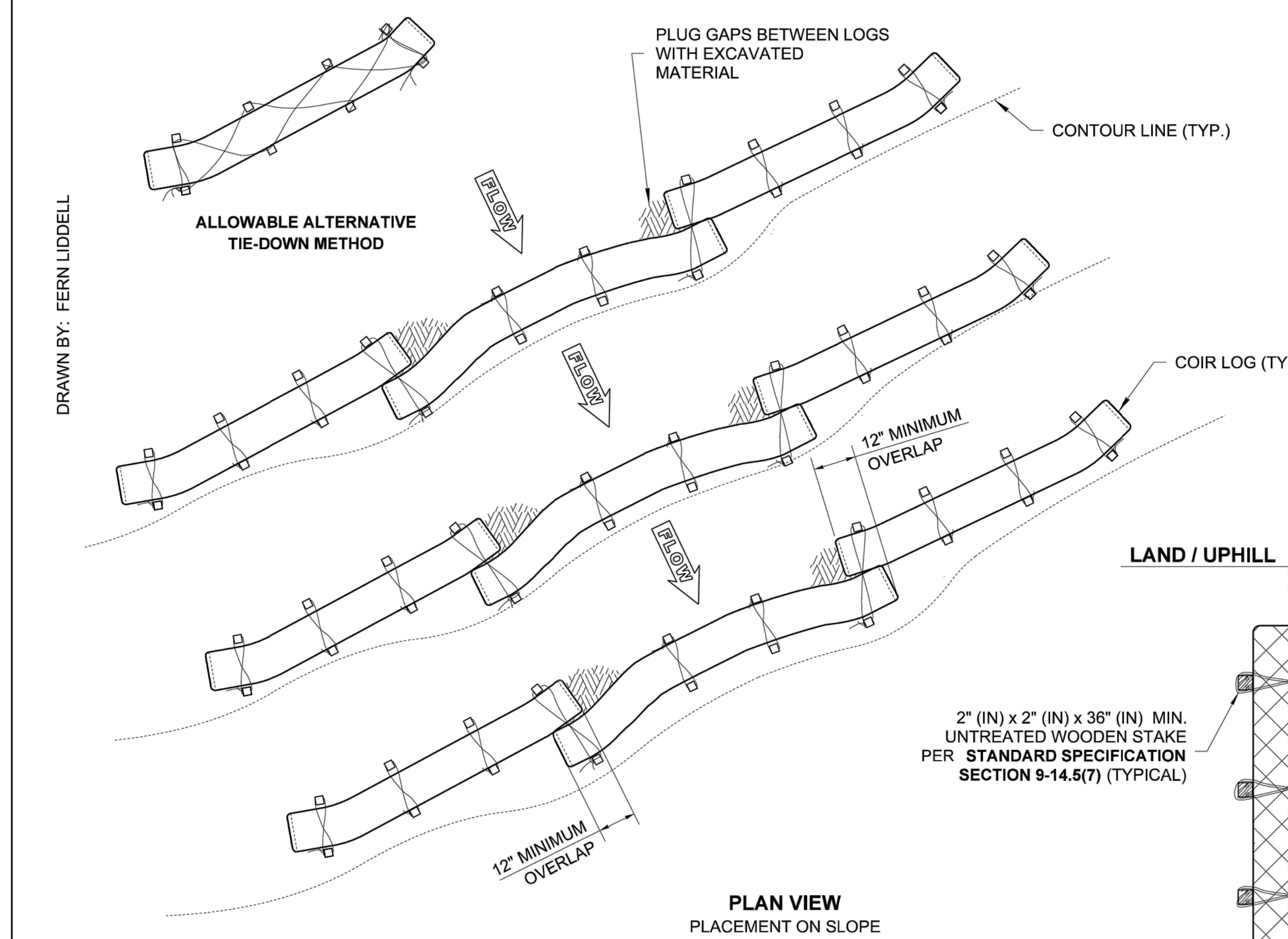
REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

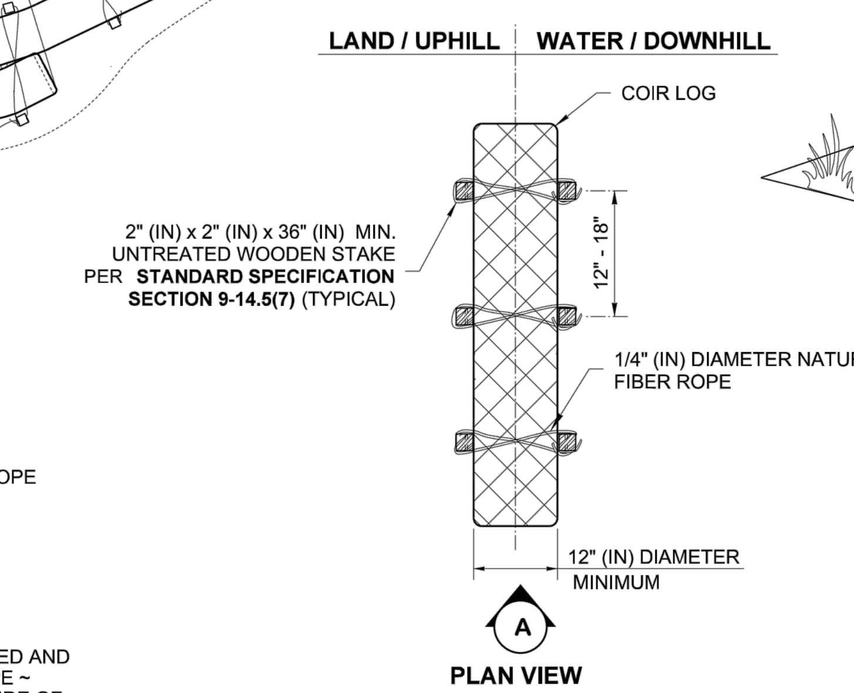
PLANT MATERIAL

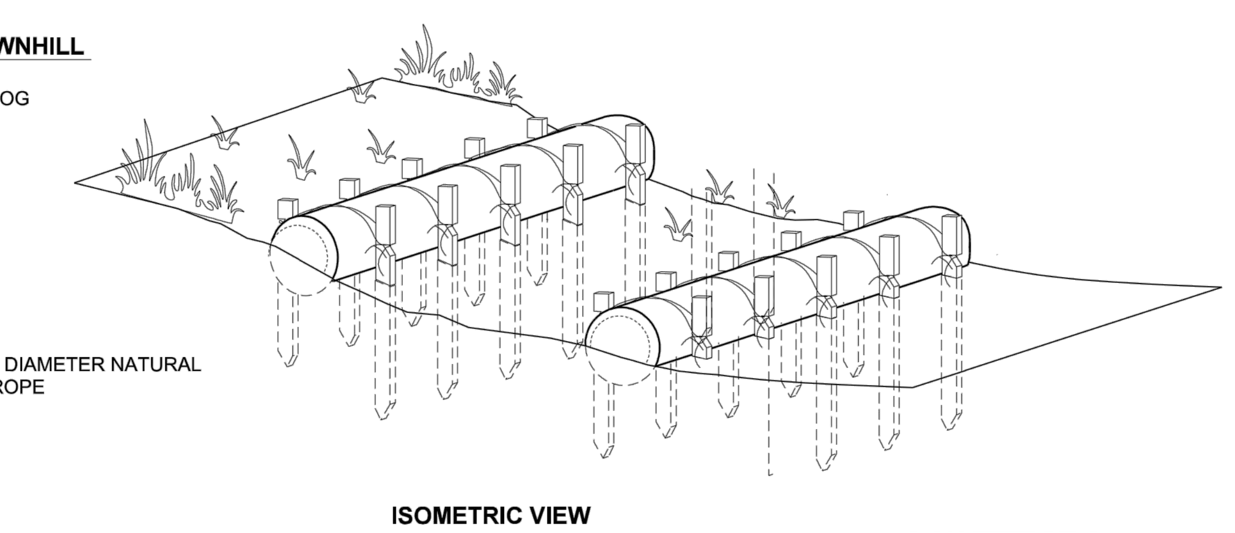
GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

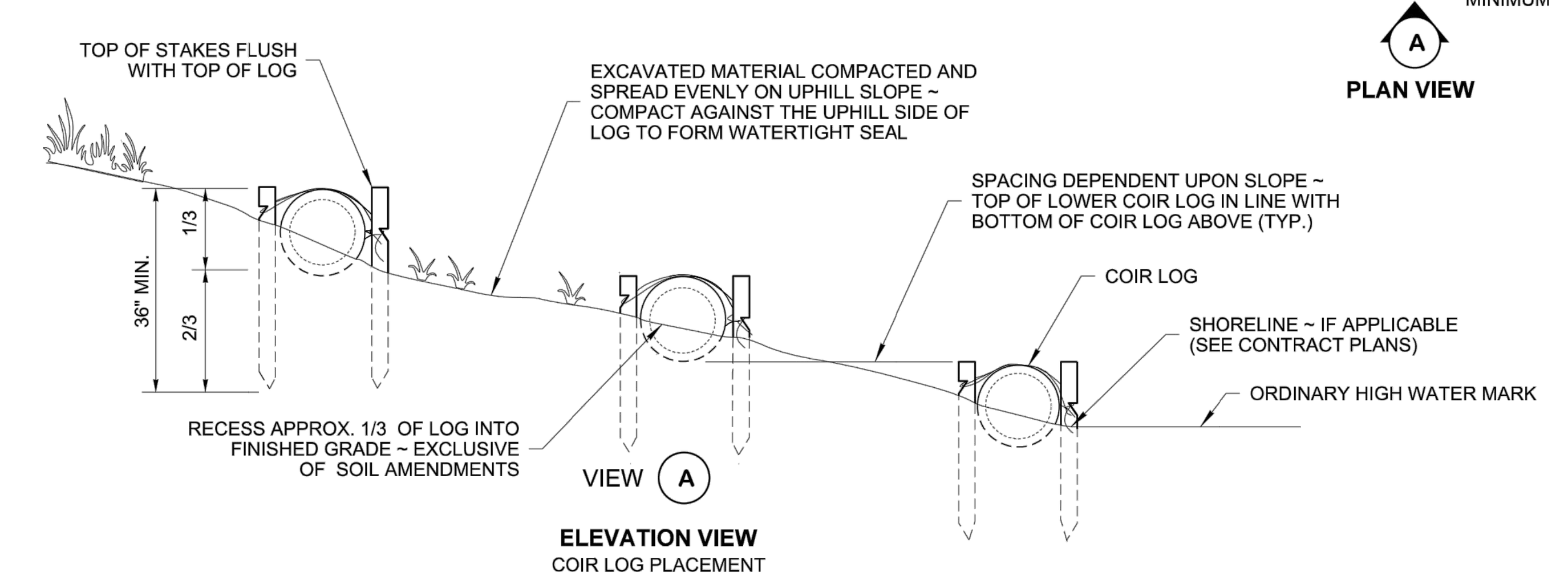
QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.









NOTES

1. Coir logs shall be installed starting at the bottom of the slope and working uphill.
2. Excavated material shall be spread evenly along the uphill slope and compacted by hand tamping or other methods approved by the Engineer.
3. Overlap Coir log ends by 12" (in) to prevent water from moving between logs.
4. Always install Coir log perpendicular to slope along contour lines. Ends shall angle uphill to prevent flow around the Coir log.
5. Use an adequate number of stakes to ensure logs are secure.
6. Coir logs shall be in accordance with **Standard Specification, Section 9-14.5(7)**, and be installed in accordance with **Standard Specification, Section 8-01.3(6)A.**
7. Perform maintenance in accordance with **Standard Specification, Section 8-01.3(15).**

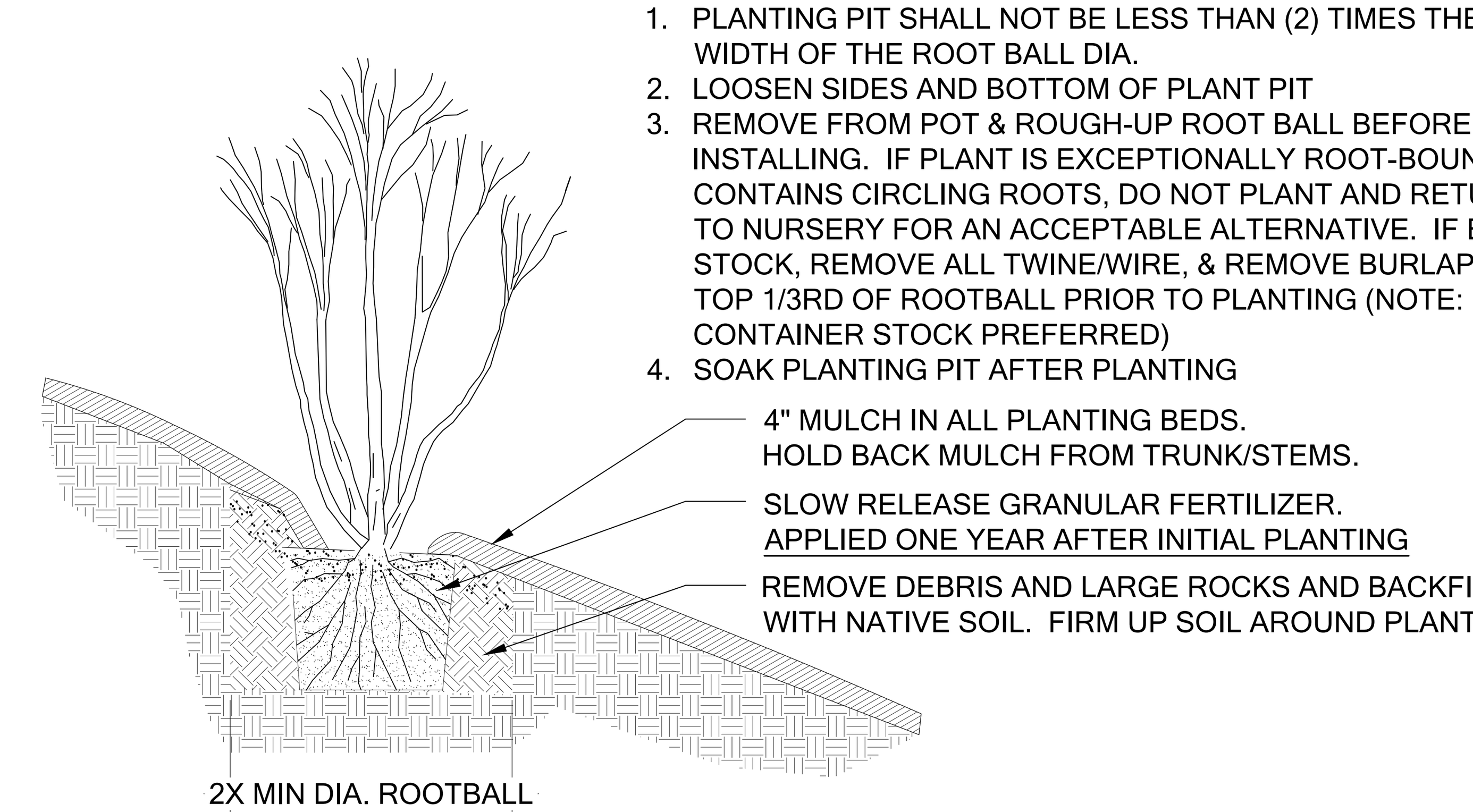
12" DIAMETER MINIMUM COIR LOG SPACING TABLE

SLOPE	MAXIMUM SPACING
1H : 1V	5' - 0"
2H : 1V	10' - 0"
3H : 1V	15' - 0"
4H : 1V	20' - 0"

(A) COIR LOG

Scale: NTS

NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOM OF PLANT PIT
3. REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. IF PLANT IS EXCEPTIONALLY ROOT-BOUND OR CONTAINS CIRCLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE. IF B&B STOCK, REMOVE ALL TWINE/WIRE, & REMOVE BURLAP FROM TOP 1/3RD OF ROOTBALL PRIOR TO PLANTING (NOTE: CONTAINER STOCK PREFERRED)
4. SOAK PLANTING PIT AFTER PLANTING



(B) CONTAINER PLANTING

Scale: NTS

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NO.	DATE	BY	APPR.	REVISIONS

R. HOHLFELD DESIGNED BY	06/23 DATE
R. HOHLFELD DRAWN BY	06/23 DATE
M. FRENCH CHECKED BY	06/23 DATE

City of Bellevue
Transportation Department

STATE OF WASHINGTON — MARINA SIMONE FRENCH — NO. 1459 EXP. 07/20/20 — LICENSED LANDSCAPE ARCHITECT

NE 24TH ST AT 172ND AVE NE
SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE
INSTALLATION DETAILS AND SPECIFICATIONS

SHT W7 OF 8

MITIGATION PLAN

THIS PLAN HAS BEEN PREPARED TO MITIGATE FOR IMPACTS TO ON-SITE CRITICAL AREAS AND BUFFERS ASSOCIATED WITH A SLOPE STABILIZATION AND TRANSPORTATION IMPROVEMENT PROJECT. THE PROJECT AREA, LOCATED ON THE SOUTH PORTION OF ARDMORE PARK (PARCEL #2425059012), IS ENCUMBERED BY STEEP SLOPE AREAS AND ASSOCIATED TOP OF SLOPE BUFFERS, AS WELL AS IDYLWOOD CREEK'S 100-FOOT STREAM BUFFER. TO MITIGATE FOR PROPOSED PROJECT IMPACTS, THIS PLAN SEEKS TO ENHANCE A PORTION OF STEEP SLOPE AREAS AND CRITICAL AREA BUFFERS ON SITE, TOTALING 4,455 SQUARE FEET. ADDITIONALLY 4,910 SQUARE FEET OF STEEP SLOPE AREAS AND BUFFERS THAT WILL BE AFFECTED BY TEMPORARY CONSTRUCTION ACTIVITIES WILL BE ENHANCED.

AREAS SUBJECT TO THE PROVISIONS OF THIS MITIGATION PLAN ARE CHARACTERIZED BY NATIVE EVERGREEN AND DECIDUOUS TREE SPECIES WITH AN UNDERSTORY DOMINATED BY HIMALAYAN BLACKBERRY. TO OFFSET IMPACTS ASSOCIATED WITH PROJECT, THE PLAN CALLS FOR THE ENHANCEMENT OF 9,365 SQUARE FEET OF THE STEEP SLOPE AND BUFFER AREAS THROUGH THE REMOVAL OF HIMALAYAN BLACKBERRY AND OTHER NOXIOUS SPECIES, AND PLANTING OF NATIVE TREES, SHRUBS AND GROUNDCOVERS. TREE SPECIES PROPOSED INCLUDE BIGLEAF MAPLE, DOUGLAS-FIR, WESTERN REDCEDAR, AND WESTERN HEMLOCK. SHRUBS INCLUDE VINE MAPLE, SERVICEBERRY, BEAKED HAZELNUT, OSOBERRY, RED-FLOWERING CURRANT, NOOTKA ROSE, SALMONBERRY, THIMBLEBERRY, SCOULER'S WILLOW, RED ELDERBERRY, AND SNOWBERRY. PROPOSED GROUNDCOVERS INCLUDE SALAL, DULL OREGON GRAPE, AND WESTERN SWORDFERN. OVERALL, A TOTAL OF 36 TREES, 440 SHRUBS, AND 750 GROUNDCOVER PLANTS COMPRISING THESE SPECIES WILL BE INSTALLED ON-SITE.

ADDITIONALLY, THIS MITIGATION PLAN WILL UTILIZE NATIVE TREES THAT WILL REQUIRE REMOVAL TO ACCOMMODATE CONSTRUCTION ACTIVITIES TO ENHANCE WILDLIFE HABITAT ON-SITE. LARGE WOODY DEBRIS FROM UP TO 14 TREE REMOVALS WILL BE PLACED THROUGHOUT THE MITIGATION AREA. SNAGS WILL BE CREATED FROM UP TO 6 TREES IF THESE TREES CANNOT BE ADEQUATELY PROTECTED DURING CONSTRUCTION.

MAINTENANCE AND MONITORING PLAN

THE SITE SHALL BE MAINTAINED AND MONITORED FOR FIVE YEARS FOLLOWING SUCCESSFUL INSTALLATION. COMPONENTS OF THE 5-YEAR MAINTENANCE AND MONITORING PLAN ARE DETAILED BELOW.

GOALS

1. RESTORE STRUCTURAL AND FUNCTIONAL VALUES, INCLUDING WATER QUALITY, SLOPE STABILIZATION, AND HABITAT FUNCTIONS.
2. PLANT CRITICAL AREAS AND BUFFERS WITH NATIVE VEGETATION THAT REPLICATES THE VEGETATION HISTORICALLY FOUND ON THE SITE IN SPECIES TYPES, SIZES, AND DENSITIES; ESTABLISH DENSE NATIVE VEGETATION THAT IS APPROPRIATE TO THE ECO-REGION AND SITE.
3. LIMIT INVASIVE AND/OR NOXIOUS WEED COVER ON-SITE.
4. INCREASE HABITAT COVER AND REFUGE FOR URBAN WILDLIFE SPECIES. PROVIDE PERCHING, NESTING AND FORAGING HABITAT FOR NATIVE BIRDS.

PERFORMANCE STANDARDS

THE STANDARDS LISTED BELOW WILL BE USED TO JUDGE THE SUCCESS OF THE INSTALLATION OVER TIME. IF PERFORMANCE STANDARDS ARE MET AT THE END OF YEAR 5, THE SITE WILL THEN BE DEEMED SUCCESSFUL AND THE PERFORMANCE SECURITY BOND WILL BE ELIGIBLE FOR RELEASE BY THE CITY OF BELLEVUE.

1. SURVIVAL: THIS STANDARD CAN BE MET THROUGH PLANT ESTABLISHMENT OR THROUGH REPLANTING IN THE FOLLOWING DORMANT SEASON AS NECESSARY TO ACHIEVE THE REQUIRED NUMBERS.
   A. ACHIEVE 100% SURVIVAL OF ALL INSTALLED WOODY PLANTS BY THE END OF YEAR 1 (FROM DATE OF PLANT INSTALLATION).
   B. ACHIEVE 90% SURVIVAL OF ALL INSTALLED WOODY PLANTS BY THE END OF YEAR 2 (FROM DATE OF PLANT INSTALLATION).
   C. ACHIEVE 85% SURVIVAL OF ALL INSTALLED WOODY PLANTS BY THE END OF YEAR 3, 4, AND 5 (FROM DATE OF PLANT INSTALLATION).
2. NATIVE PLANT COVER:
   A. ACHIEVE 40% AEREAL COVER OF NATIVE SAPLING TREES, SHRUBS, AND GROUNDCOVER BY YEAR 2. GROUNDCOVERS MAY CONTRIBUTE UP TO 5% AEREAL COVER AND NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.
   B. ACHIEVE 60% COVER OF NATIVE SAPLING TREES, SHRUBS AND GROUNDCOVER BY YEAR 3. GROUNDCOVERS MAY CONTRIBUTE UP TO 10% AEREAL COVER AND NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.
   C. ACHIEVE 80% COVER OF NATIVE SAPLING TREES, SHRUBS AND GROUNDCOVER BY YEAR 5. GROUNDCOVERS MAY CONTRIBUTE UP TO 15% AEREAL COVER NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS COVER STANDARD.
3. SPECIES DIVERSITY:
   A. ESTABLISH AT LEAST THREE NATIVE TREE, NINE NATIVE SHRUB, AND THREE NATIVE GROUNDCOVER SPECIES WITHIN THE ENHANCEMENT AREA BY YEAR 3 AND MAINTAIN THIS DIVERSITY THROUGH YEAR 5. NATIVE VOLUNTEER SPECIES MAY COUNT TOWARDS THIS STANDARD.
4. INVASIVE COVER: AERIAL COVER FOR ALL NON-NATIVE, INVASIVE AND NOXIOUS WEEDS WILL NOT EXCEED 10% AT ANY YEAR DURING THE MONITORING PERIOD. INVASIVE PLANTS INCLUDE BUT ARE NOT LIMITED TO HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS), CUT LEAF BLACKBERRY (RUBUS LACINIATUS), KNOTWEEDS (POLYGONUM CUSPIDATUM AND OTHERS), REED CANARYGRASS (PHALARIS ARUNDINACEA), CHERRY LAUREL (PRUNUS LAUROCERASUS), ENGLISH HOLLY (ILEX AQUIFOLIUM), AND IVY SPECIES (HEDERA SPP.).

MONITORING METHODS

THIS MONITORING PROGRAM IS DESIGNED TO TRACK THE SUCCESS OF THE MITIGATION SITE OVER TIME AND TO MEASURE THE DEGREE TO WHICH THE SITE IS MEETING THE PERFORMANCE STANDARDS OUTLINED IN THE PRECEDING SECTION.

AN AS-BUILT PLAN WILL BE PREPARED BY THE RESTORATION PROFESSIONAL PRIOR TO THE BEGINNING OF THE MONITORING PERIOD. THE AS-BUILT PLAN WILL BE A MARK-UP OF THE PLANTING PLANS INCLUDED IN THIS PLAN SET. THE AS-BUILT PLAN WILL DOCUMENT ANY DEPARTURES IN PLANT PLACEMENT OR OTHER COMPONENTS FROM THE PROPOSED PLAN.

MONITORING WILL TAKE PLACE ONCE ANNUALLY IN THE FALL FOR FIVE YEARS. YEAR-1 MONITORING WILL COMMENCE IN THE FIRST FALL SUBSEQUENT TO INSTALLATION.

THE FORMAL MONITORING VISIT SHALL RECORD AND REPORT THE FOLLOWING IN AN ANNUAL REPORT SUBMITTED TO THE CITY OF BELLEVUE:

1. VISUAL ASSESSMENT OF THE OVERALL MITIGATION AREA.
2. YEAR-1 COUNTS OF LIVE AND DEAD PLANTS BY SPECIES. YEAR-2 THROUGH YEAR-5 COUNTS OF ESTABLISHED NATIVE TREES AND SHRUBS BY SPECIES, TO THE EXTENT FEASIBLE.
3. COUNTS OF DEAD PLANTS WHERE MORTALITY IS SIGNIFICANT IN ANY MONITORING YEAR.
4. ESTIMATE OF NATIVE AEREAL COVER IN THE MITIGATION AREA USING THE LINE-INTERCEPT METHOD ACROSS FIVE ESTABLISHED 50 FOOT LONG TRANSECTS THAT ARE REPRESENTATIVE OF OVERALL VEGETATION.
5. ESTIMATE OF NON-NATIVE, INVASIVE WEED AEREAL COVER IN THE MITIGATION AREA USING THE LINE-INTERCEPT METHOD ACROSS FIVE ESTABLISHED 50 FOOT LONG TRANSECTS THAT ARE REPRESENTATIVE OF OVERALL VEGETATION. .
6. TABULATION OF ESTABLISHED NATIVE SPECIES, INCLUDING BOTH PLANTED AND VOLUNTEER SPECIES.
7. PHOTOGRAPHIC DOCUMENTATION FROM AT LEAST SEVEN FIXED REFERENCE POINTS.
8. ANY INTRUSIONS INTO OR CLEARING OF THE PLANTING AREAS, VANDALISM, OR OTHER ACTIONS THAT IMPAIR THE INTENDED FUNCTIONS OF THE MITIGATION AREA.
9. RECOMMENDATIONS FOR MAINTENANCE OR REPAIR OF ANY PORTION OF THE MITIGATION AREA.

MAINTENANCE

THE SITE WILL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOR AT LEAST FIVE YEARS FOLLOWING COMPLETION OF CONSTRUCTION:

1. FOLLOW THE RECOMMENDATIONS NOTED IN THE PREVIOUS MONITORING SITE VISIT.
2. GENERAL WEEDING FOR ALL PLANTED AREAS:
   A. AT LEAST TWICE YEARLY, REMOVE ALL COMPETING WEEDS AND WEED ROOTS FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 18 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AT LEAST TWICE DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY, LOWER PLANT REPLACEMENT COSTS, AND INCREASED LIKELIHOOD THAT THE PLAN MEETS PERFORMANCE STANDARDS BY YEAR 5.
   B. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLAN INSTALLATION.
   C. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER/WEED EATER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
   D. SELECTIVE APPLICATIONS OF HERBICIDE MAY BE NEEDED TO CONTROL INVASIVE WEEDS, ESPECIALLY WHEN INTERMIXED WITH NATIVE SPECIES. HERBICIDE APPLICATION, WHEN NECESSARY, SHALL BE CONDUCTED ONLY BY A STATE-LICENSED APPLICATOR.
3. APPLY SLOW-RELEASE, GRANULAR FERTILIZER TO EACH INSTALLED PLANT ANNUALLY IN THE SPRING (BY JUNE 1) OF YEARS 2 THROUGH 5.
4. REPLACE MULCH AS NECESSARY TO MAINTAIN A 4-INCH-THICK LAYER, RETAIN SOIL MOISTURE, AND LIMIT WEEDS.
5. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS DURING THE UPCOMING DORMANT SEASON (OCTOBER 15 TO MARCH 1), FOR BEST SURVIVAL.
6. THE APPLICANT WILL ENSURE THAT WATER IS PROVIDED FOR THE ENTIRE PLANTED AREA WITH A MINIMUM OF 1 INCH OF WATER PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION, THROUGH THE OPERATION OF A TEMPORARY IRRIGATION SYSTEM. LESS WATER IS NEEDED DURING MARCH, APRIL, MAY AND OCTOBER.

CONSTRUCTION NOTES AND SPECIFICATIONS

THE RESTORATION PROFESSIONAL WILL MONITOR:

1. ALL SITE PREPARATION.
   A. COIR LOG/STRAW WATTLE INSTALLATION.
   B. WEED REMOVAL.
   C. SOIL PREPARATION.
   D. MULCH PLACEMENT.
2. PLANT MATERIAL INSPECTION.
   A. PLANT MATERIAL DELIVERY INSPECTION.
   B. 100% PLANT INSTALLATION INSPECTION.

GENERAL WORK SEQUENCE

SITE PREPARATION

1. INSTALL COIR LOG OR STRAW WATTLE PER PLANS.
2. MANUALLY CLEAR INVASIVE AND ORNAMENTAL VEGETATION FROM MITIGATION AREA DURING SPRING AND/OR SUMMER MONTHS (I.E., AVOID CREATING EXPOSED SOIL CONDITIONS DURING THE WINTER STORM SEASON).
   A. REMOVE INVASIVE SPECIES (I.E., HIMALAYAN BLACKBERRY, ENGLISH IVY), IN ACCORDANCE WITH KING COUNTY NOXIOUS WEED BEST MANAGEMENT PRACTICES. FOR MORE INFORMATION: HTTPS://WWW.KINGCOUNTY.GOV/SERVICES/ENVIRONMENT/ANIMALS-AND-PLANTS/NOXIOUS-WEEDS.ASPX.
   B. CUT UNDESIRABLE VEGETATION. LEAVE ROOTS INTACT TO MINIMIZE POTENTIAL IMPACTS TO SLOPES ON ADJACENT PROPERTIES.
   C. FLUSH-CUT ORNAMENTAL WOODY VEGETATION (E.G. ENGLISH HOLLY, NON-NATIVE APPLE OR PLUM) THROUGHOUT MITIGATION AREA AND IMMEDIATELY TREAT STEM (DAUBING OR PAINTING) WITH APPROPRIATE HERBICIDE. PERSON APPLYING HERBICIDE SHALL BE STATE-LICENSED. DO NOT REMOVE SUBSURFACE ROOTS.
   D. AVOID AND MINIMIZE DISTURBANCE AND/OR COMPACTION TO ROOTS OF ESTABLISHED NATIVE TREES TO BE RETAINED WHEN REMOVING VEGETATION FROM WITHIN TREE DRIPLINES.
3. BLANKET-MULCH CLEARED AREAS WITH WOOD MULCH, FOUR INCHES THICK.
   A. ENSURE MULCH DOES NOT TOUCH STEMS OF EXISTING (OR INSTALLED) VEGETATION. SEE PLANTING DETAIL ON SHEET W4.

MITIGATION PLANTING AND IRRIGATION

1. INSTALL MITIGATION PLANTS DURING THE DORMANT SEASON (OCTOBER 15 - MARCH 1).
   A. INSTALL PER THE PLANTING DETAILS.
2. INSTALL A TEMPORARY, ABOVE GROUND IRRIGATION SYSTEM TO PROVIDE FULL COVERAGE TO ALL INSTALLED PLANTS WITHIN THE BUFFER ENHANCEMENT AREA.

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. FERTILIZER (FOR NEAR AQUATIC ENVIRONMENTS): SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. LABEL MUST INDICATE THAT PRODUCT IS SAFE FOR AQUATIC ENVIRONMENTS. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS 2 AND 3, NOT IN YEAR ONE.
2. IRRIGATION SYSTEM: AUTOMATED SYSTEM CAPABLE OF DELIVERING AT LEAST ONE INCH OF WATER PER WEEK FROM JUNE 1 THROUGH SEPTEMBER 30 FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION.
3. RESTORATION PROFESSIONAL: WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
4. WOODCHIP MULCH: “ARBORIST CHIPS” (CHIPPED WOODY MATERIAL) APPROXIMATELY ONE TO THREE INCHES IN MAXIMUM DIMENSION (NOT SAWDUST). THIS MATERIAL IS COMMONLY AVAILABLE IN LARGE QUANTITIES FROM ARBORISTS OR TREE-PRUNING COMPANIES. MULCH SHALL NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/DEMOLITION DEBRIS.
5. COMPOST: COMPOST SHALL MEET WSDOT STANDARDS SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 9-14.4(8) FOR FINE COMPOST.

CONTINGENCIES

IF THERE IS A SIGNIFICANT PROBLEM WITH THE RESTORATION AREAS MEETING PERFORMANCE STANDARDS, A CONTINGENCY PLAN WILL BE DEVELOPED AND IMPLEMENTED. CONTINGENCY PLANS CAN INCLUDE, BUT ARE NOT LIMITED TO: SOIL AMENDMENT, ADDITIONAL PLANT INSTALLATION, AND PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION.

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60% DESIGN - NOT FOR CONSTRUCTION

NO.	DATE	BY	APPR.	REVISIONS

R. HOHLFELD 06/23 DESIGNED BY DATE
R. HOHLFELD 06/23 DRAWN BY DATE
M. FRENCH 06/23 CHECKED BY DATE

City of Bellevue
Transportation Department

STATE OF WASHINGTON · MARINA SIMONE FRENCH · 22459 · EXP. 07/12/20 · LICENSED LANDSCAPE ARCHITECT

NE 24TH ST AT 172ND AVE NE
SLOPE STABILIZATION

NE 24th ST AT 172nd AVE NE
MITIGATION PLAN NOTES

SHT W8 OF 8

Appendix B

PHOTOS

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Photo 1. Idylwood Creek (Stream A) pool.

Photo 2. Idylwood Creek (Stream A).

Photo 3. Idylwood Creek (Stream A), surface flow filters through coarse gravel and cobble.

Photo 4. Piped discharge to Idylwood Creek (Stream A).

Photo 5. Himalayan blackbery thicket above stream.

Photo 6. Large black cottonwood, Himalayan blackberry in background.

Photo 7. Steep slope vegetation.

Photo 8. Existing sidewalk.